Biography of Prof Dr Muhammad Subhan Qureshi
covering the perception of humans about this Universe
and the ambitions and struggles for a prosperous society

The Purpose of Life



Engr Irfan ul Haq Qureshi and Prof M Subhan Qureshi

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About the Book

The Purpose of Life is a compilation of the experiences and stories of the life of Prof Dr Muhammad Subhan Qureshi, PhD (Theriogenology) narrated by his son Engr Irfan ul Haq Qureshi. Prof Qureshi is a biologist from district Bannu of Khyber Pakhtunkhwa province of Pakistan, living in Peshawar. He got his earlier education from his hometown Bannu and left for his higher studies at the University of Veterinary Sciences, Lahore and then University of Agriculture, Faisalabad. He served the provincial livestock department for 22 years and then joined the University of Agriculture Peshawar for 16 years till his retirement from government service.

The Purpose of Life covers the The Universe and the Earth , Origin of Life and the Human Being, The Purpose of Creation, A Brief History of Humankind - Sapiens, The Rise and Fall of Civilizations, The sustainable development approach, My Place in the Universe, My Earlier Life, Motto Goals and Struggle, Establishment of the Dairy Science Park, The Purpose of Our life and Reference**s.**

During his active public service he worked in a non-traditional manner and tried to justify his presence as an professional and senior executive of the livestock sector. He came up with the idea of academia-industry linkages through a biennial series of international conferences and industrial exhibitions, biorisk management, quality control and technical support to the emerging entrepreneurs across the livestock value chain and international consultancy with the provincial government of Khyber Pakhtunkhwa and the FAO and ITC of the United Nations.

Establishing livestock technoparks was suggested at Peshawar and Quetta as autonomous bodies with shared authority and responsibility of public and private sector organizations for development of a network of entrepreneurship models. Generation of exportable biotech and food surpluses was the final target of such parks. Dr Abdul Rahman Ilyas, Advisor to President, Academy for Scientific Research and Technology, Government of Egypt, desired establishing Dairy Science Cairo (DSPC), a joint project of (ASRT) and Dairy Science Park Peshawar Pakistan. He is the co-founder of DSP alongwith Prof M Subhan Qureshi. Dr Amr Faroukh Abdelkhalik Vice President and Mahmoud Sakr President ASRT have endorsed the proposal.

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Life Motto of Prof Dr Muhammad Subhan Qureshi: Wa ma arsalnaka illa Rahmatan lil alameen (And We have not sent you, [O Muhammad], except as a mercy to the worlds (Al-Qur'an: 21-107)

For more information: See link https://dairysciencepark.org/gg/; https://dairysciencepark.org/purpose/

List of Contents

About the Book 2

Author's Note 6

Foreword 7

Dedication 9

Published by Australian Muslim Times 10

1. **The Universe and the Earth** 11

The Big Bang; Birth of elementary particles; Cosmic Microwave Background, the First Light and the Divine Guidance; Birth of stars, galaxies and black holes; Birth of the solar system; Formation of Earth; The Creator tells the story Himself

2. **Origin of Life and the Human Being** 17

Origin of life on Earth; Biodiversity; Origin of human beings; The theory of evolution; Challenged by geneticists; The divine revelations; The Christian viewpoint; The Muslim viewpoint; Opinion of Dr Israr Ahmad; Human embryology and the Qur'an; Sadaat analysis; Subhan Qureshi analysis; Survival of human beings and other mammals; The Creator sustaining the living beings; The Vidas reference; Biblical reference; Quranic reference; The Cosmic Calendar – Scientific and Quranic Perspectives

3. **The Purpose of Creation** 37

The Hindu concept; The Judeo-Christian Concept; Opinion of Albert Einstein; Opinion of Stephen Hawking; The Quranic concept; Spiritual Growth; Generosity and Contentment; The last sermon of Prophet Muhammad (SAW); Opinion of Abul A'la Maududi; Opinion of Mehdi Golshani; Opinion of Dr Abu Ameena Bilal Philips; Opinion of Prof Qureshi

4. **A Brief History of Humankind - Sapiens** 51

An animal of no significance; The tree of knowledge; A day in the life of Adam and Eve; The origin of Affluent Society; Talking ghosts; The flood; The end of Sloth; History's biggest fraud; Justice in history; The scent of money; The vicious circle; He and She; Imperial visions; The law of religions; Polytheism; God is one; The Secret of Success; The Capital Creed; A Growing Pie; And they lived happily ever after; Counting happiness; Chemical happiness; Know thyself; End of Homo Sapiens

5. **The Rise and Fall of Civilizations** 62

Mumtaz and Mohsin Review; Wiener Analysis; Climate-Change Collapse; Climate-technology-war interaction; Forced Migration; The current danger; The New World Order, Antichrist and Dajjal; Dr Israr Ahmad explains Dajjal in the light of Qur'an and Ahadith; Dajjali Civilization, blinded with one eye; Preparations for arrival of Dajjal reviewed by Dr Israr Ahmad; Shifting of US Embassy to Jerusalem; Masjid Al Aqsa and Third Temple; Arab Peace Initiative 2000; Sheikh Imran Hosein's Beyond September 11; Pakistan Regime Change 2017; Trump's Deal of the Century 2020;

List of Contents (continued)

Deal of the Century reviewed by Al Jazeera; Normalization of Israeli-Saudi Relationship; The Gaza Genocide of 2023; Establishing Neom City at Saudi Arabia; Neom City and Dajjal; End of Time – Opinion of Abrahamic Religions; Opinion of Dr Israr Ahmad about End of Time

6. **The sustainable development approach** **80**
The 2030 Agenda for Sustainable Development; Rumi, Iqbal and SDGs: Mevlana Jalaluddin Rumi; Allama Muhammad Iqbal; Promoting tolerance and war on terror; Emergence of the Role of Dairy Science Park; Academia Industry Linkages; UN SDG Action 40154; Dairy Science Park connecting past with the future; DSP Achieved Sustainable Development Goals; Good Governance; Food Safety; Women Empowerment; Good Practices; Employment Generation; Responsiveness; Competitiveness; National Eco-Security System Pakistan (NESS-Pak)

7. **Our Place in the Universe** **92**
The Dogan analysis at Charles Sturt University Australia; His Story; His Birthplace; His Quraysh Family; Settlement at Bannu; His grandfather; Early life and education; Teaching Hadith and Qur'an; His experience with Grandfather; Religious authority; Religion in his family; His Father; His Mother as she coached us; His Wife; Early life; His Marriage; His kids; Illness and tragic demise; Excellent disposal of responsibilities; Symbols of being forgiven by Allah SWT; The Great Price paid by His Family; Maulana Abidullah Majboor Surani and the Quraysh Family Mission; Mr Matiullah Khan; Quality of services; Dr Gulzar Ali Khan; Maintaining quality standards

8. **Prof Qureshi's Earlier Life, Life Motto, Goals, Struggle and Resistance faced** **118**
His early life; Realizing His life motto; Role of Meem Sheen; Role of Dr Israr Ahmad; Role of Jamila Subhan Qureshi; Coping with his heavy professional engagements; Prof Qureshi's Life Motto; Implementation of his life motto; Duties at SPU Surezai and CVH Peshawar; Duties/adventures at VRI Peshawar; Interaction with private dairy sector; Shaping up the struggle as Dairy Science Park; The Great Price paid by Our Family; His Goals; Resistance faced; Resistance by Secretary Agriculture GoKP; Resistance by Vice Chancellor UAP; Victimization through milk theft inquiry; Victimization identified by Peshawar Higher Court and Contempt of Court; Victimization leading to death of wife of Prof Qureshi

9. **Establishing Dairy Science Park - His Life Mission** **132**
Preamble; Dairy Science Park – Chronological Developments; Linkage with Australia and New Zealand; Biennial Series of International Conferences and Industrial Exhibitions; DSP I – 2011 Peshawar; DSP II – 2013 Peshawar; DSP III – 2015 Peshawar; DSP IV – 2017 Konya, Turkey; DSP V – 2019 Quetta; DSP VI - 2023 Bahawalpur; Biorisk Management; Market Oriented Production Strategy and Business Incubation; Facilitating Agribusiness Linkages; Vision of Livestock Technoparks; Entrepreneurship Network; Policy reforms; Research and Development; Academic Excellence; Academia-Government-Industry/ International Linkages: Charles Sturt University Australia; Policy Development and Reforms Plan; Introducing Good Governance; Good Governance Model Proposed; Historical Perspectives of Good Governance Models; FAO Opinion on Good Governance; The Current Governance System; FAO Consultancy; ITC-UN Consultancy

List of Contents (continued)

10. The Purpose of Our Life **161**

Prof Qureshi's vision; Prof Qureshi'sH responsibilities; Meeting the human needs; Meeting material needs of the mankind; Meeting spiritual needs of the mankind; Our duties towards the Almighty God; Our duties towards the creatures; Our lifestyle needs brakes

11. References and Videos **167**

12. Annexures **175**

I. Summary of Career Profile of Prof M Subhan Qureshi
II. FAO-UN Consultancy for KP Livestock Action Plan 2019 - Executive Summary
III. ITC-UN Consultancy for Balochistan Livestock Breeding Policy 2022 - Executive Summary
IV. ASRT Egypt Consultancy for Dairy Science Park Cairo - Executive Summary
V. Pakistan Ecotourism Profile 2024
VI. Recommendations of International Solar Expo and Conference 2024

13. Pictorial Review **196**

Author's Note

Prof Muhammad Subhan Qureshi has put forward certain mind-blowing questions, like: The purpose of life! Why do we exist? How did this tiny Earth come into existence in the big Cosmos, how it continues to survive and how it is protected from black holes, meteors, solar winds and collisions with other cosmic bodies?

How did the Earth get the extraordinary favorable conditions to support life? How the Human Being emerged on Earth as the most advanced form of life? Did all these occur spontaneously or the events were orchestrated by a Great Designer? Who created everything? Do we need a Creator, a Sustainer and an all-times Protector?

Does God exist?

Where did we come from? Are we useless creatures in this vast Universe spread over 93 billion light years existing since 13.8 billion years? Is He free to take care of us? Is He listening to me and responding to my calls? Is He taking care of all of us and the Universe? Who is protecting us all in this Universe from Disasters? Does anyone care about us, entrapped in a series of miseries and trials? Does my Creator remember me and take care of me? What He wants from me? How can I make Him happy? Can I email Him? Can I get divine guidance? Who are prophets? Who is the last Prophet Muhammad (SAW)? What is the impact of the last prophet on this World and the Universe?

How can I retrieve the message of God? Does He respond to my calls? Can I see Him? Can I talk to Him? What is my duty? What is my duty towards the Creator and the creatures? How can I increase the value of my time? Am I successful in my life? Am I accountable to anybody for my bad deeds? Are we being punished by the Creator individually and collectively through disasters like coronavirus? Have we entered the era of fitnas of Dajjal before the Doomsday? Will I be rewarded by anyone for my good deeds? What is the Hereafter? How will I be punished for my deeds? What stages I will have to pass through? What is my ultimate destination?

Numerous questions occupy the conscious minds of human beings. Among the myriad plants and animals, humans stand as stewards of their own actions, exerting an undeniable influence on the surrounding environment. The responsibility to shape this world into either a beautiful or unsightly place in the vast universe lies squarely on their shoulders. The interplay between individuals shapes the equilibrium of peace and prosperity for people, as well as the well-being of animals, plants, and the environment.

Professor Qureshi has dedicated himself to contemplating these questions and offering thoughtful responses based on scientific evidence and divine guidance. This biography is a humble attempt to share his insights with readers, with the hope that it serves as a lesson in navigating life's challenges and establishing meaningful life principles.

(Irfan ul Haq Qureshi)
Greenwend Energy Pvt Ltd, Peshawar

Foreword

It is an honor for me to write this Foreword for the illustrious biography of Prof Dr Muhammad Subhan Qureshi, Ex-Dean, Faculty of Animal Husbandry and Veterinary Sciences, University of Agriculture, Peshawar, Pakistan and Founder/President, Dairy Science Park, Peshawar.

The title is impressive as it conveys a message to the general readers about the way the learned professor looks to the purpose of life in the context of the meaning applied to it by the Creator as well as by scholars of standing. It is a timely discourse as a vast majority of the world population is indifferent to the objective behind the creation of mankind.

The Universe and the Earth is the first chapter with informative discussion combating together the facts reaching mankind through divine revelations and views expressed by scientists of standing. While Quranic verses have been cited in the text whenever necessary, credit has also been given to the expression of scientists quoted in the chapter.

Origin of Life and the Human Being, too, has reported an interesting debate revolving around the facts about life and the conflicting views expressed by theorists and followed by the dominant and undeniable views given by the Creator through successive revelations. An interesting part of the discussion is the step by step development of the baby in the womb of the mother, explained by Allah (the Almighty) in the Holy Qur'an. The Qur'anic views have been substantiated with the modern day medical research where exactly the same stage of the growth of a baby has been described. A brief history of mankind - Sapiens is a very informative chapter. Adam Smith has been referred to as a very important contributor to the establishment of principals for modern economics.

The Purpose of Creation is the core part of the document. Thanks to the Creator (Allah the Almighty) who has settled down teh question once for all by declaring: "We did not create humankind except that they should worship Me". The Hindu Concept, the Judeo-Christian Concept, the views of Albert Einstein, Stephen Hawking, Abul A'la Maududi, Mehdi Golshani, Abu Ameena Bilal Philips and finally Prof Qureshi, have deliberated on the issue in detail.

The Rise and Fall of Civilizations is a thought provoking debate. This is a discussion of central importance because the rise and fall of civilizations has been a regular phenomenon of the history of mankind. Reasons have been attributed as to why the nations rise and why they fall. Sustainable development agenda of the UN and Dairy Science Park have been discussed to provide solutions to the issues prevailing at global level. These two initiatives have got meaningful contributions from Prof Qureshi.

His Place in the Universe is a good account of birth of Prof Qureshi, a lovely introduction of his parents and grandparents, particularly the attention given by him to the education and training of their offsprings in an era when higher education was not that common in the southern districts of the present province of Khyber Pakhtunkhwa. Some close relatives of the biographer and their services for the cause of education and governance inPakistan have been brought on record.

His Early Life and Life Motto is related to the education, character building and development of life motto by Prof Qureshi, influenced by high level journalist Mian Muhammad Shafi (Meem Sheen, late), religious scholar cum philosopher of medical background Dr Israr Ahmad (late) and Jamila Subhan Qureshi wife (late) of Prof Qureshi. To implement the motto, Prof Qureshi was involved heavily in

professional engagements at Semen Production Unit (SPU) Surezai and Civil Veterinary Hospital (CVH) Peshawar; duties/adventures at Veterinary Research Institute (VRI) Peshawar and an extensive interaction with private dairy and livestock sector and other stakeholders across livestock value chain.

Resistance to the struggles under his life motto was faced from the powerful stakeholders like senior bureaucrats of the provincial government and the University of Agriculture Peshawar, although senior political authorities like the senior minister local government, Chief Minister Khyber Pakhtunkhwa had supported it on endorsement of the Additional Chief Secretary Khyber Pakhtunkhwa. Such hindrance to the reforms process against the national and public interests, need to be evaluated further.

His Earlier Life, Life Motto, Goals and Struggle, seems to be the core chapter in view of the strong argument presented in support of the Dairy Science Park, which was later on reshuffled and the achievements were shaped into a separate chapter named as Establishing Dairy Science Park - the Mission. After preliminary discussion, the proceedings of the international conference held in 2011, 2013, 2015, 2017, 2019 and 2022; and the minutes of meetings have been given with some details.

Being the concluding chapter of the Biography, “The Purpose of Life” focus has been given as to how the lot of mankind be improved particularly that of the downtrodden. Being an expert of Agriculture the learned professor has presented his solution of the hardships faced by the rural poor in Pakistan and the outside world, what could be the contribution of Dairy Science Park, the challenges faced by the project in Pakistan and the possible way out. As a practicing Muslim, Prof Qureshi presumes that heI has to convey the message of Allah SWT and teachings of Prophet Muhammad (SAW) to the people around the Globe, to get successes in this World and the Hereafter. Being careful in our worldly affairs, to be helpful for others, as followers of Prophet Muhammad (SAW), the Rahmatullilalameen, the blessing for the Worlds, would lead us towards a universal society full of peace and prosperity.

Prof Dr Taj Muharram Khan
University of Peshawar

Dedication

Mr Meem Sheen sensitized Prof Qureshi to prepare a gift for presentation to Prophet Muhammad (SAW) on the Day of Judgement; Dr Israr Ahmad motivated him to work for revival of Ummah as a tool for supporting mission of the Prophet as Rahmatullilalameen, the blessing for the World; and his wife and my sweet mother who passed away during his struggle resisted by the forces of status quo against this Mission. Hence, Prof Qureshi dedicated his biography to the three persons, living no more in this world, but this mission is going on and will be gifted to Prophet Muhmmd SAW on the Day of Judgement, in Sha Allah. May Allah bless their souls with eternal peace at Jannatul Firdous. Amin.

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- The Purpose of Life – My Opinion
- My Story
- Five examples of scientific facts in the Quran
- The theory of evolution, as challenged by the geneticists
- The Theory of Evolution in the context of the divine revelations
- Modern Human Embryology and the Quran

1. The Universe and the Earth

The Big Bang

The Universe has come into existence as a result of the Big Bang, occurring 13.8 billion years ago (Space.com 2020, May and Howell 2023). It began as a tiny singularity that went through an explosive expansion, gradually expanding into the cosmos we see today. Using telescope observations and models of particle physics, researchers have been able to suggest a rough timeline of major events in the cosmos's life (Mann 2019). Some of our universe's most important historical moments, from its infancy to its eventual death were described.

Sean Carroll, a theoretical physicist at the California Institute of Technology, describes the Big Bang, as a moment in time, not a point in space, the moment when time itself began, the instant from which all subsequent instants have been counted. The Big Bang wasn't really an explosion but rather a period when the universe was extremely hot and dense and space began to expand outward in all directions at once. The model of the Big Bang states that the universe was an infinitely small point of infinite density. Mathematical infinities don't make sense in physics equations, so the Big Bang is really the point at which our current understanding of the universe breaks down.

The Cosmic Inflation Era was the universe's next trick to grow really big really fast. Within the first 0.00000000000000000000000000001 (that's a decimal point with 30 zeros before the 1) seconds after the Big Bang, the cosmos could have expanded exponentially in size, driving apart areas of the universe that had previously been in close contact. This era, known as inflation, remains hypothetical, but cosmologists like the idea because it explains why far-flung regions of space appear so similar to one another, despite being separated by vast distances. Back in 2014, a team thought they had found a signal of this expansion in light from the early universe. But the results later turned out to be something much more mundane: interfering interstellar dust.

Birth of Elementary Particles

Quark-gluon plasma followed a few milliseconds after the beginning of time, the early universe was really hot (between 7 and 10 trillion degrees Fahrenheit, Weitering 2018). At such temperatures, elementary particles called quarks, which are normally bound tightly inside of protons and neutrons, wandered around freely. Gluons, which carry a fundamental force known as the strong force, were mixed in with these quarks in a soupy primordial fluid that permeated the cosmos. Researchers have managed to create similar conditions in particle accelerators on Earth. But the difficult-to-achieve state only ever lasted a few fractions of a second, in terrestrial atom smashers as well as in the early universe.

There was a lot of action in the next stage of time, which began around a few thousandths of a second after the Big Bang. As the cosmos expanded, it cooled, and soon conditions were clear enough for quarks to come together into protons and neutrons. One second after the Big Bang, the universe's density dropped enough that neutrinos — the lightest and least-interacting fundamental particle — could fly forward without hitting anything, creating what's known as the cosmic neutrino background, which scientists have yet to detect.

Cosmic Microwave Background, the First Light and the Divine Guidance

For the first 3 minutes of the universe's life, protons and neutrons fused together, forming an isotope of hydrogen called deuterium as well as helium and a tiny amount of the next-lightest element, lithium (Space.com 2020). But once the temperature fell, this process stopped. For a very long time, nothing in the universe gave off light. This period, which lasted around 100 million years, is known as the Cosmic Dark Ages. This epoch remains extremely difficult to study because astronomers' knowledge of the universe comes almost entirely from starlight. Without any stars it's difficult to know what went on. As the universe continues to expand; it has cooled and lost energy, which has seen the frequency of this radiation reduced to the microwave region of the electromagnetic spectrum.

By around 180 million years after the Big Bang, hydrogen and helium began to collapse into large spheres, generating infernal temperatures in their cores that lit up into the first stars. The universe entered a period known as Cosmic Dawn, or reionization, because the hot photons radiated by early stars and galaxies broke neutral hydrogen atoms in interstellar space into protons and electrons, a process known as ionization. Just how long reionization lasted is difficult to say. Because it occurred so early, its signals are obscured by later gas and dust, so the best scientists can say is that it was over by around 500 million years after the Big Bang.

Finally, 380,000 years after the Big Bang, things were cool enough so that hydrogen and helium could combine with free electrons, creating the first neutral atoms. Photons, which had previously run into the electrons, could now move without interference, creating the cosmic microwave background (CMB, Lea 2023), a relic from this era that was first detected in 1965.

The first creation, as per divine revelation, was the noor (light) comprising the soul of Prophet Muhammad SAW (Ahmad 2013). Allah SWT has been mentioned as the light of Heaven and the Earth. Angles have been created from light. The Torah and the Gospel have been referred to as being "Guidance and Light" and the Qur'an as the "Light and a clear Writ". However, this is a story of metaphysical dimension beyond the reach of investigations under human capacity, just like dark matter and dark energy (Zada 2015).

Birth of Stars, Galaxies and Black Holes

Using observations from NASA's Hubble and Spitzer space telescopes, a model of star formation was developed that suggested the first generation of stars emerged within 250 million years after the Big Bang (Tillman 2019). Here's where the universe gets down to business or, at least, the familiar business we know about today. Small early galaxies began to merge together into larger galaxies and, around 1 billion years after the Big Bang, supermassive black holes formed in their centers. Bright quasars, which produce intense beacons of light that can be seen from 12 billion light-years away, turned on.

The universe continued to evolve over the next several billion years. Spots of higher density from the primordial universe gravitationally attracted matter to themselves. These slowly grew into galactic clusters and long strands of gas and dust, producing a beautiful filamentary cosmic web that can be seen today.

Birth of the Solar System

Our solar system is estimated to have been born a little after 9 billion years after the Big Bang, making it about 4.6 billion years old (Dutfield and Chow 2022). According to current estimates, the sun is one of more than 100 billion stars in our Milky Way galaxy alone, and orbits roughly 25,000 light-years from the galactic core.

About 4.5 billion years ago, in one particular galaxy, a cloud of gas collapsed down into a yellow star with a system of rings around it. These rings coalesced into eight planets, plus various comets, asteroids, dwarf planets, and moons, forming a familiar stellar system. The planet third from the central star managed to either retain a ton of water after this process, or else comets later delivered a deluge of ice and water.

On that third, watery world, between 3.8 and 3.5 billion years ago (depending on whom you ask), tiny, simple microbes winked into existence. These life-forms emerged and evolved into wondrous sea monsters and gigantic, leaf-eating dinosaurs. Eventually, about 200,000 years ago, along came upright creatures capable of marveling at our mysterious universe and discovering how the whole thing came to be.

Formation of Earth

How a Soviet mathematician quietly solved the mystery of planet formation? (Levitt, Dan 2023). Over 4.8 billion years ago, the atoms that would create us sailed in great clouds of gas and dust. There was no solar system, no planets, no Earth. In fact, for a long time, scientists could not explain how our solid planet, not to mention one so hospitable to life, appeared at all. How was our now-rocky planet conjured, like magic, out of an ethereal cloud of gas and dust?

Although planets surround stars in the galaxy, how they form remains a subject of debate. Despite the wealth of worlds in our own solar system, scientists still aren't certain how planets are built. Redd (2016) reviewed the formation of Earth in light of two theories. The first and most widely accepted theory, core accretion, works well with the formation of the terrestrial planets like Earth but has problems with giant planets. The second, the disk instability method, may account for the creation of these giant planets.

Scientists are continuing to study planets in and out of the solar system in an effort to better understand which of these methods is most accurate. Approximately 4.6 billion years ago, the solar system was a cloud of dust and gas known as a solar nebula. Gravity collapsed the material in on itself as it began to spin, forming the sun in the center of the nebula.

With the rise of the sun, the remaining material began to clump up. Small particles drew together, bound by the force of gravity, into larger particles. The solar wind swept away lighter elements, such as hydrogen and helium, from the closer regions, leaving only heavy, rocky materials to create smaller terrestrial worlds like Earth. But farther away, the solar winds had less impact on lighter elements, allowing them to coalesce into gas giants. In this way, asteroids, comets, planets, and moons were created.

Earth's rocky core formed first, with heavy elements colliding and binding together. Dense material sank to the center, while the lighter material created the crust. The planet's magnetic field probably formed around this time. Gravity captured some of the gases that made up the planet's early atmosphere.

Early in its evolution, Earth suffered an impact by a large body that catapulted pieces of the young planet's mantle into space. Gravity caused many of these pieces to draw together and form the moon, which took up orbit around its creator.

The flow of the mantle beneath the crust causes plate tectonics, the movement of the large plates of rock on the surface of the Earth. Collisions and friction gave rise to mountains and volcanoes, which began to spew gasses into the atmosphere.

Although the population of comets and asteroids passing through the inner solar system is sparse today, they were more abundant when the planets and sun were young. Collisions from these icy bodies likely deposited much of the Earth's water on its surface. Because the planet is in the Goldilocks zone, the region where liquid water neither freezes nor evaporates but can remain as a liquid, the water remains at the surface, which many scientists think plays a key role in the development of life.

Exoplanet observations seem to confirm core accretion as the dominant formation process. Stars with more "metals" — a term astronomers use for elements other than hydrogen and helium — in their cores have more giant planets than their metal-poor cousins. According to NASA, core accretion suggests that small, rocky worlds should be more common than the more massive gas giants.

The Creator tells the story Himself

God, Allah SWT, the Creator of the Universe, tells the story Himself, in His last Book, the Qur'an. The Qur'an contains hundreds of verses that speak of the universe, its components and phenomena such as the Earth, the sun, the moon, the stars, mountains, wind, running water, plants, embryological animals, and the successive stages of development of the human being (Karim 2020).

More than 1,000 verses relating to cosmic facts or cosmic phenomena can be counted in the Qur'an. During the early days of the Qur'an, scientific knowledge of the universe was limited and it was not easy to elaborate on the verses relating to the universe or its phenomena except within the limitations of the time. However, we now know about the laws of the universe much more than before and that is why reviewing the 1,000 or more verses relating to the cosmos, man and his surroundings can be one of the most obvious miraculous aspects of the Qur'an. This is because of the precedence of the Qur'an, which was revealed more than 14 centuries ago, with many of the scientific facts, at a time when people had no knowledge whatsoever of such facts.

The Qur'an has addressed so many of these facts in a language that is more precise, accurate and concise than scientists have ever been able to do. Nothing in the Qur'an contradicts any established scientific facts. These cannot be all covered in a short article and hence I have chosen the following five verses that can testify to the miraculous nature of the Quran from a scientific point of view:

1) The creation of the universe is explained by astrophysicists in a widely accepted phenomenon, popularly known as the "Big Bang." It is supported by observational and experimental data gathered by astronomers and astrophysicists for decades. According to the "Big Bang," the whole universe was initially one big mass (Primary Nebula). Then there was a "Big Bang" (Secondary Separation), which resulted in the formation of Galaxies. These were then divided to form stars, planets, the sun, the moon, etc. The origin of the universe was unique and the probability of its occurring by "chance" is zero. The Quran contains the following verse, regarding the origin of the universe: Have those who disbelieved not considered that the heavens and the earth were (once) a joined entity, then We separated them and

made from water every living thing? Then will they not believe? (Quran, 21:30) The striking congruence between the Quranic verse and the “Big Bang” is inescapable! How could a book, which first appeared in the deserts of Arabia 1400 years ago, contain this profound scientific truth?

2) In 1925 an American astronomer by the name of Edwin Hubble provided observational evidence that all galaxies are receding from one another, which implies that the universe is expanding. The expansion of the universe is now an established scientific fact. This is what the Quran says regarding the formation of the universe: And the heaven We constructed with strength, and indeed, We are [its] expander. (Quran, 51:47) Stephen Hawking, in his book A Brief History of Time, says: “The discovery that the universe is expanding is one of the great intellectual revolutions of the 20th century.” The Quran mentioned the expansion of the universe before man even learnt to build a telescope!

3) Scientists say that before the galaxies in the universe were formed, celestial matter was initially in the form of gaseous matter as galactic dust or star dust (May and Howell, 2023). In short, huge gaseous matter or clouds were present before the formation of the galaxies. To describe initial celestial matter, the word “smoke” is more appropriate than gas. The following Quranic verse refers to this state of the universe by the word *dukhan* which means smoke: Then He turned to heaven when it was smoke... (Quran, 41:11) Again, this fact is a corollary to the “Big Bang” and was not known to mankind during the time of the Prophet Muhammad . What then, could have been the source of this knowledge?

4) It was thought that the sense of feeling and pain was only dependent on the brain. Recent discoveries prove that there are pain receptors present in the skin without which a person would not be able to feel pain. When a doctor examines a patient suffering from burn injuries, he verifies the degree of burns by a pinprick. If the patient feels pain, the doctor is happy, because it indicates that the burns are superficial and the pain receptors are intact. On the other hand if the patient does not feel any pain, it indicates that it is a deep burn and the pain receptors have been destroyed. The Quran gives an indication of the existence of pain receptors in the following verse: Indeed, those who disbelieve in Our verses (i.e. signs, proofs) - We will drive them into a Fire. Every time their skins are roasted through We will replace them with other skins so they may taste the punishment. Indeed, Allah is ever Exalted in Might and Wise. But those who believe and do righteous deeds - We will admit them to gardens beneath which rivers flow, wherein they abide forever. (Quran, 4:56-57) Prof. Tagatat Tejasen, Chairman of the Dept. of Anatomy at Chiang Mai University in Thailand, had spent a great amount of time on research of pain receptors. Initially he could not believe that the Quran mentioned this scientific fact 1400 years ago. He later verified the translation of this particular Quranic verse. Prof. Tejasen was so impressed by the scientific accuracy of the Quranic verse, that at a medical Conference in 1985 he proclaimed in public the Shahadah (Islamic Declaration of Faith), i.e. he embraced Islam.

5) The source of iron (Fe); we read in the Quran: Indeed, We have sent down iron in which there is great (military) might and benefits for the people. (Quran, 57:25) It has recently been proven that all iron, not only in our planet but also in the entire solar system, was obtained from outer space. This is because the temperature of the sun cannot generate iron. The sun has a surface temperature of 6000 degrees Celsius and a central temperature of about 20 million degrees Celsius. There exists much hotter stars, which are known as novae, or supernovae where temperatures can reach 100s of billions of degrees Celsius and it is in these stars that iron is formed. When the percentage of iron reaches a certain proportion of the mass of the star it explodes and these exploded-particles travel in space until they are captured by the gravitational fields of other heavenly bodies. This is how our solar system all obtained its iron and it is an

established fact today that all the iron in our solar system was not generated or created within the system but has come to it from outer space.

2. Origin of Life and the Human Being

The Origin of Life on Earth

Cosmic ancestry is a hypothesis of the origin of life on Earth, based on the panspermia views of Fred Hoyle and Chandra Wickramasinghe (Wikipedia, 2020). It speculates that life, like the universe itself, has no date of origin, and has always existed and can only descend from ancestors at least as highly evolved as itself. Under this belief, life on Earth was delivered from space. This belief stands in stark contrast to the theory accepted by most cosmologists that the age of the universe is roughly 13.8 billion years, and that sufficient evidence is not available to presume whether life exists outside the Earth, let alone the age of that life.

Abiogenesis has been described as the natural process by which life has arisen from non-living matter, such as simple organic compounds (Ivanovich, 1938). While the details of this process are still unknown, the prevailing scientific hypothesis is that the transition from non-living to living entities was not a single event, but an evolutionary process of increasing complexity that involved molecular self-replication, self-assembly, autocatalysis, and the emergence of cell membranes. Although the occurrence of abiogenesis is uncontroversial among scientists, its possible mechanisms are poorly understood. There are several principles and hypotheses for how abiogenesis could have occurred.

The alternative panspermia hypothesis speculates that microscopic life arose outside Earth by unknown mechanisms, and spread to the early Earth on space dust and meteoroids. It is known that complex organic molecules occur in the Solar System and in interstellar space, and these molecules may have provided starting material for the development of life on Earth. An extreme speculation is that the biochemistry of life could have begun as early as 17 million years after the Big Bang, during a habitable epoch, and that life may exist throughout the universe.

Earth remains the only place in the universe known to harbor life, and fossil evidence from the Earth informs most studies of abiogenesis. The earliest undisputed evidence of life on Earth dates from at least 3.5 billion years ago, and possibly as early as the Eoarchean Era (between 3.6 and 4.0 billion years ago), after geological crust started to solidify following the molten Hadean Eon. In May 2017 scientists found possible evidence of early life on land in 3.48-billion-year-old geyserite and other related mineral deposits (often found around hot springs and geysers) uncovered in the Pilbara Craton of Western Australia (UNSW 2017).

However, a number of discoveries suggest that life may have appeared on Earth even earlier. As of 2017, microfossils, or fossilized microorganisms, within hydrothermal-vent precipitates dated from 3.77 to 4.28 billion years old found in rocks in Quebec may harbor the oldest record of life on Earth, suggesting life started soon after ocean formation 4.4 billion years ago. According to biologist Stephen Blair Hedges, "If life arose relatively quickly on Earth … then it could be common in the universe. However, extraterrestrial technically intelligent life, in contrast to the simpler microbial life referred to by Hedges, may be so rare that humankind's nearest neighbors may be beyond the possibility of our ever contacting them.

Biodiversity

Biodiversity is the variety and variability of life on Earth; typically a measure of variation at the genetic, species, and ecosystem level. Terrestrial biodiversity is usually greater near the equator (Kevin, 2000), which is the result of the warm climate and high primary productivity. Biodiversity is not distributed evenly on Earth, and is richest in the tropics. These tropical forest ecosystems cover less than 10 percent of earth's surface, and contain about 90 percent of the world's species. Marine biodiversity is usually the highest along coasts in the Western Pacific, where sea surface temperature is the highest, and in the mid-latitudinal band in all oceans. There are latitudinal gradients in species diversity. Biodiversity generally tends to cluster in hotspots and has been increasing through time, but will be likely to slow in the future. It is also worth mentioning that if our biodiversity is high enough, we can finally live in a world without hunger.

Biodiversity is a term used to describe the enormous variety of life on Earth (National Geography 2020). It can be used more specifically to refer to all of the species in one region or ecosystem. Biodiversity refers to every living thing, including plants, bacteria, animals, and humans. Scientists have estimated that there are around 8.7 million species of plants and animals in existence. However, only around 1.2 million species have been identified and described so far, most of which are insects. This means that millions of other organisms remain a complete mystery.

Over generations, all of the species that are currently alive today have evolved unique traits that make them distinct from other species. These differences are what scientists use to tell one species from another. Organisms that have evolved to be so different from one another that they can no longer reproduce with each other are considered different species. All organisms that can reproduce with each other fall into one species.

Scientists are interested in how much biodiversity there is on a global scale, given that there is still so much biodiversity to discover. They also study how many species exist in single ecosystems, such as a forest, grassland, tundra, or lake. A single grassland can contain a wide range of species, from beetles to snakes to antelopes. Ecosystems that host the most biodiversity tend to have ideal environmental conditions for plant growth, like the warm and wet climate of tropical regions. Ecosystems can also contain species too small to see with the naked eye. Looking at samples of soil or water through a microscope reveals a whole world of bacteria and other tiny organisms.

Some areas in the world, such as that of Mexico, South Africa, Brazil, the southwestern United States, and Madagascar, have more biodiversity than others. Areas with extremely high levels of biodiversity are called hotspots. Endemic species—species that are only found in one particular location—are also found in hotspots.

All of the Earth’s species work together to survive and maintain their ecosystems. For example, the grass in pastures feeds cattle. Cattle then produce manure that returns nutrients to the soil, which helps to grow more grass. This manure can also be used to fertilize cropland. Many species provide important benefits to humans, including food, clothing, and medicine. Much of the Earth’s biodiversity, however, is in jeopardy due to human consumption and other activities that disturb and even destroy ecosystems. Some scientists estimate that half of all species on Earth will be wiped out within the next century. Conservation efforts are necessary to preserve biodiversity and protect endangered species and their habitats.

Origin of Human Beings

What a piece of work is man ! (Strauss 2015, Video-1). Everyone agrees on that much. But what exactly is it about Homo sapiens that makes us unique among animals, let alone apes, and when and how did our ancestors acquire that certain something? The past century has seen a profusion of theories. Some reveal as much about the time their proponents lived in as they do about human evolution.

1. We Make Tools: "It is in making tools that man is unique," anthropologist Kenneth Oakley wrote in a 1944 article. Apes use found objects as tools, he explained, "but the shaping of sticks and stones to particular uses was the first recognizably human activity".

2. We're Killers: According to anthropologist Raymond Dart, our predecessors differed from living apes in being confirmed killers—carnivorous creatures that "seized living quarries by violence, battered them to death, tore apart their broken bodies, dismembered them limb from limb, slaking their ravenous thirst with the hot blood of victims and greedily devouring livid writhing flesh."

3. We Share Food: In the 1960s, the killer ape gave way to the hippie ape. Anthropologist Glynn Isaac unearthed evidence of animal carcasses that had been purposefully moved from the sites of their deaths to locations where, presumably, the meat could be shared with the whole commune.

4. We Swim in the Nude: A little later in the age of Aquarius, Elaine Morgan, a TV documentary writer, claimed that humans are so different from other primates because our ancestors evolved in a different environment—near and in the water.

5. We Throw Stuff: Archaeologist Reid Ferring believes our ancestors began to man up when they developed the ability to hurl stones at high velocities. At Dmanisi, a 1.8- million-year-old hominin site in the former Soviet republic of Georgia, Ferring found evidence that Homo erectus invented public stonings to drive predators away from their kills.

6. We Hunt: Hunting did much more than inspire cooperation, anthropologists Sherwood Washburn and C. S. Lancaster argued in a 1968 paper: "In a very real sense our intellect, interests, emotions and basic social life—all are evolutionary products of the success of the hunting adaptation.

7. We Trade Food for Sex: More specifically, monogamous sex. The crucial turning point in human evolution, according to a theory published in 1981 by C. Owen Lovejoy, was the emergence of monogamy six million years ago.

8. We Eat (Cooked) Meat: Big brains are hungry—gray matter requires 20 times more energy than muscle does. They could never have evolved on a vegetarian diet, some researchers claim; instead, our brains grew only once we started eating meat, a food source rich in protein and fat, around two to three million years ago.

9. We Eat (Cooked) Carbs: Or maybe our bigger brains were made possible by carb-loading. Once our ancestors had invented cooking, tubers and other starchy plants became an excellent source of brain food, more readily available than meat.

10. We Walk on Two Feet: Did the crucial turning point in human evolution occur when our ancestors descended from the trees and started walking upright? Proponents of the "savanna hypothesis" say climate change drove that adaptation.

11. We Adapt: Richard Potts, Director of the Smithsonian's Human Origins Program, suggests that human evolution was influenced by multiple changes in climate rather than a single trend. The emergence of the Homo lineage nearly three million years ago, he says, coincided with drastic fluctuations between wet and dry climates. Natural selection favored primates that could cope with constant, unpredictable change, Potts argues: adaptability itself is the defining characteristic of humans.

12. We Unite and Conquer: Anthropologist Curtis Marean offers a vision of human origins well suited to our globalized age: We are the ultimate invasive species. After tens of thousands of years confined to a single continent, our ancestors colonized the globe. How did they accomplish this feat? The key, Marean says, was a genetic predisposition to cooperate—born not from altruism but from conflict.

So what's wrong with all these theories? Many of them have merit, but they share a bias: the idea that humanity can be defined by a single well-defined trait or group of traits and that a single stage in evolution was a crucial turning point on the inevitable road to Homo sapiens.

The Theory of Evolution

The theory of evolution by natural selection, first formulated in Darwin's book "On the Origin of Species" in 1859, is the process by which organisms change over time as a result of changes in heritable physical or behavioral traits (Darwin 1859 reviewed by Than 2018). Changes that allow an organism to better adapt to its environment will help it survive and have more offspring.

The theory has two main points, said Brian Richmond, Curator of Human Origins at the American Museum of Natural History in New York City. "All life on Earth is connected and related to each other," and this diversity of life is a product of "modifications of populations by natural selection, where some traits were favored in and environment over others," he said. More simply put, the theory can be described as "descent with modification," said Briana Pobiner, an anthropologist and educator at the Smithsonian Institution, National Museum of Natural History in Washington, D.C.

In the first edition of "On the Origin of Species" in 1859, Charles Darwin speculated about how natural selection could cause a land mammal to turn into a whale. As a hypothetical example, Darwin used North American black bears, which were known to catch insects by swimming in the water with their mouths open: "I can see no difficulty in a race of bears being rendered, by natural selection, more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale," he speculated. The idea didn't go over very well with the public. Darwin was so embarrassed that the swimming-bear passage was removed from later editions of the book.

Darwin accepts the limitation of his theory as follows under Chapter Vi, Organs of extreme perfection: It is scarcely possible to avoid comparing the eye to a telescope. We know that this instrument has been perfected by the long-continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process. We must suppose that there is a power always intently watching each slight accidental alteration in the transparent layers; and carefully selecting each alteration which, under varied circumstances, may, in any way, or in any degree, tend to produce a distinctive image. May we not believe that a living optical instrument might thus be formed as superior to one of glass, as the works of the Creator are to those of man? If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down.

Challenged by geneticists

The Theory of Evolution presented by Charles Darwin was critically reviewed (Callier 2018). When Charles Darwin articulated his theory of evolution by natural selection in On the Origin of Species in 1859, he focused on adaptations — the changes that enable organisms to survive in new or changing environments. Selection for favorable adaptations, he suggested, allowed ancient ancestral forms to gradually diversify into countless species.

But now some scientists are pushing back against this idea, known as neutral theory, saying that genomes show much more evidence of evolved adaptation than the theory would dictate. This debate is important because it affects our understanding of the mechanisms that generate biodiversity, our inferences about how the sizes of natural populations have changed over time and our ability to reconstruct the evolutionary history of species (including our own).

But in 1968, the famed population geneticist Motoo Kimura resisted the adaptationist perspective with his neutral theory of molecular evolution. In a nutshell, he argued that an “appreciable fraction” of the genetic variation within and between species is the result of genetic drift — that is, the effects of randomness in a finite population — rather than natural selection, and that most of these differences have no functional consequences for survival and reproduction.

The following year, the biologists Jack Lester King and Thomas Jukes published “Non-Darwinian Evolution,” an article that likewise emphasized the importance of random genetic changes in the course of evolution. Nevertheless, neutral theory was rapidly adopted by many biologists. This was partly the result of Kimura’s reputation as one of the most prominent theoretical population geneticists of the time, but it also helped that the mathematics of the theory was relatively simple and intuitive.

Today, half a century after Kimura’s article, more affordable genomic sequencing and sophisticated statistical methods are allowing evolutionary theorists to make headway on quantifying the contribution of adaptive variation and neutral evolution to species differences. In species like humans and fruit flies, the data have revealed extensive selection and adaptation, which has led to strong pushback against Kimura’s original idea, at least by some researchers.

In a paper published in late October 2018 in the Journal of the National Cancer Institute, Townsend and his Yale colleagues presented the results of their evolutionary analysis of mutations in cancers. Although identifying the mutations undergoing the strongest selection is clearly useful and important, selection can also have subtle but important indirect effects on regions of the genome neighboring the target of selection. The first hint of these indirect effects came in the 1980s and ’90s with the advent of the polymerase chain reaction, a technique that enabled researchers to look at nucleotide-level variation in gene sequences for the first time. One thing they discovered was an apparent correlation between the level of genetic variation and the rate of recombination at any specified region of the genome.

Andrew Kern is a population geneticist now at the University of Oregon, who contributed an article with Matthew Hahn, a population geneticist at Indiana University, to a special issue of Molecular Biology and Evolution celebrating the 50th anniversary of neutral theory. By 2005, researchers could get whole-genome data from a variety of organisms, and they started to find this apparent correlation between levels of genetic variation and the rates of recombination everywhere, Kern said. That correlation meant that forces beyond direct purifying selection and neutral drift were creating

differences in levels of variation across the genomic landscape. Kern argues that the differences in the rates of recombination across the genome reveal a phenomenon called genetic hitchhiking. When beneficial alleles are closely linked to neighboring neutral mutations, natural selection tends to act on all of them as a unit.

In humans, recent evidence suggests “there’s a lot more adaptation than we ever thought was present,” Kern said. Recent human evolution is largely a history of migrations to new geographical locations where humans encountered new climates and pathogens to which they had to adapt. In 2017, Kern published a paper showing that most human adaptations arose from existing genetic variation within the genome, not novel mutations that spread rapidly through the population.

In other words, it’s yet another non-neutral mechanism affecting genome evolution. As useful as the neutral theory has been in its various forms over the past half-century, the future of evolutionary theory may inevitably depend on finding ever-better ways to do the hard work of figuring out exactly how — and how much — selection is inexorably shaping our genomes after all.

The Divine Revelation

The Christian viewpoint

A Roundtable was organized by Evolution, a co-production of the WGBH/NOVA Science Unit and Clear Blue Sky Productions (Evolution 2020). The question was: Must we take the first several verses of Genesis literally in order to respect the spiritual authority of the rest of the Bible? Conversely, must the literal nature of the Genesis creation story be discounted in order to reconcile religion with evolution, astronomy, physics, and other sciences?

Ayala, a Penalist was of the opinion as follows: We should take -- the believers, people who accept the Bible as a revealed book -- the chapters of Genesis in the Bible as literally true with respect to their religious content, not with respect to the examples or historical descriptions that are being used. There is nothing new in this. Let me quote from Saint Augustine. Augustine, one of the great theologians in the history of Christianity, writing about the year 400 in his commentary on the literal meaning of Genesis, said: "In the matter of the shape of heaven, the sacred writers did not want to teach man facts that would be of no avail for their salvation." Similarly, the Pope, to quote another religious authority -- and many could be quoted in many different traditions, Jewish or Christian and among different Christian denominations -- but to quote from a speech that Pope John Paul II made in 1981:

> "The Bible speaks to us of the origins of the universe and its make-up, not in order to provide us with a scientific treatise, but in order to state the correct relationship of man with God and the universe. Sacred Scripture wishes simply to declare that the world was created by God. And in order to teach these truths, it expresses itself in the terms of the cosmology in use at the time of the writer. The Sacred Book, likewise, wishes to tell man that the world was created for the service of man and the glory of God."

So the point made by Saint Augustine and by the Pope is that it is a blunder to mistake the Bible for an elementary textbook of astronomy, geology, and biology. The sacred writer is using a description of the natural world which will be understandable and will be generally accepted by other people at the time when the sacred text was being written. Clearly, the writer could not have written in terms of science as we know it today.

But again, the important point is that, therefore, these descriptions of historical detail that are used by the Bible need not be taken literally. What has to be taken literally is the religious content of the teachings.

The theory of evolution seemed to go against religious teachings that God made the Earth and created all living things, as they knew them (BBC 2020). Christians believed that God had created humans 'in his own image', that humans were superior to all other creatures and had a soul that is immortal. The theory of evolution challenged the idea that God is the designer of the universe and that the beauty, order and complexity of the universe is evidence of this (the design argument).

The idea that living things adapt to their environment was opposed to their belief that God had created the perfect environment for them. The Bible says humans were created on the sixth day of creation, not over a period of millions of years. These scientific theories were first put forward in the 19th century, when Christianity was an important influence on people's lives and the way they thought. Many people saw them as a direct attack on their faith. Charles Darwin faced criticism from people who could not accept what they saw as his 'anti-religious' ideas.

The Genesis creation story is at least 2,500 years old and was written when people lived completely different lives in an undeveloped environment. Answers to very difficult questions, such as how human life began, usually involved God because God was seen as the source and explanation for everything. The study of science was then largely unknown. The Genesis stories should not be compared too closely to scientific theories. These scientific theories are much more recent. Christians have put forward the theory of intelligent design, that everything is planned and designed by God, and that each and every change that takes place is the direct working of God in creation.

The Muslim viewpoint

Hameed (2013) reported a debate on the theory of evolution under Islamic perspective. The event, organized by the Deen Institute, was titled, ”Have Muslims Misunderstood Evolution?”. The speakers included an evolutionary biologist, a biological anthropologist, two theologians and a bona fide creationist. It lasted seven hours, yet almost everyone stayed till the end. Ehab Abouheif is an evolutionary biologist who holds the Canada research chair at McGill University and works on ant evolution. He laid out the scientific case for biological evolution and spoke about the need for Muslims to understand this bedrock principle of modern biology. He used the example of his own personal faith to counter the misconception that one cannot reconcile evolution with Islam.

According to Islamic theistic belief, only Allah is the “Necessary Being” and the “Eternal Being” (Ahmad 2013). In stark contrast, the vast expanse of space and time and the sum total of creation and existence (including human beings) are only “potentialities”, “possibilities” and “contingencies”. While there can be no dispute regarding these two beliefs, the process by which “probability” emerged from “Necessity” and “contingency” from “Eternity” remains a topic of debate and contestation among theologians. What stages did this process pass through? Is there only descent and devolution from the Necessity/ Eternity to the probability/contingency? Or has there been a process of ascent and evolution involved in all this too?

At the present stage in the human intellectual odyssey, human knowledge has reached a point where it has become capable of going beyond merely investigating matters related to the organization of the

Created Order and Intelligent Design; it has now begun to investigate issues related to the event of creation itself. That knowledge which was given to Adam (AS) at the very beginning in the form of "Knowledge of the Names" symbolized a latent potentiality or capacity in the human entity. After having passed through numerous stages of manifestation and exfoliation, the "knowledge of the Names" now stands at the threshold of gaining mastery over the very forces of nature that once threatened the existence of this fragile creature.

The Qur'an keeps the needs of ordinary populace in focus and takes into account their intellectual capacities. As a result, the Qur'an relies upon only general pointers to address issues related to specialized philosophical or academic interest, higher gnosis, and subtle spiritual realities. For those with sharpened intellects and heightened spiritual sensibilities these "general pointers" should be sufficient to shed light on such matters --- as the saying in Persian goes: "For the intelligent, pointers suffice".

The Qur'an identifies the verbal imperative of Allah i.e. "Kun" or "Be!" as being the basis and catalyst through which initiated the process of Genesis or the Event of Creation. In the Words of the Qur'an: "…..and when He wills a thing to be, He but says unto it, "Be" and it is." [Al-Baqarah, 2:117]. Several such Ayah Karima address the same theme practically manifest an identical meaning, and the conclusion to be derived from them is that, whenever Allah decides on a matter, it is sufficient for Him to utter the verbal imperative "Kun" (i.e. Be!) and the matter is done --- the "Word of Allah" is all that is needed in order to bring a thing or event into being. The Qur'an repeatedly refers to the legal injunctions, individual and social moral decrees, juridical decisions, and ordained laws set by Allah as the kalimaat or "Words" of Allah, as and Intelligent Design.

Just as the Knowledge and Wisdom of Allah is limitless, it is entirely possible that His "inexhaustibility" is partially reflected in the domain of created order. If this interpretation is accepted then every single created being would represent the manifestation of a Divine Imperative "Be"! Out of the innumerable and limitless creations that Allah has brought into being, the Qur'an explicitly refers to only Prophet Isa d (Jesus Christ) as being the "Word of Allah". In Surah Aal-e-Imran [3:39], the Qur'an describes Prophet Yahya d (John the Baptist) as being one who would "…..confirm the truth of a Word from Allah". And a little later in the same Surah [3:45], the Qur'an uses the following words to describe Prophet Isa in the context of the glad tidings that the angel came to give to Maryam regarding the virgin birth of a noble child: "O Maryam! Allah sends you glad tidings of a Word from Him."

It is this very "apportioning" and "guiding" that manifests in the realm of inanimate matter in the form of the "laws of nature" or "physical laws". Beyond the realm of inanimate matter, in the realm of plants "biological laws" are added to the "physical laws" to "determine" and "guide" this realm of Allah's creation. Further still, in the animal world, the element of "natural instincts" is added to the aforementioned physical and biological laws to govern the growth and development of the animal kingdom and similar species. Further yet in the human realm, the dimension of ratiocination or the "rules of logic" is added to the aforementioned three elements to "determine" and "guide" the human being --- and beyond the domain of ratiocination or rationality there is nothing but "Divine Revelation".

The functioning of the entirety of creation depends on these laws and the specific realm to which a specific portion of creation belongs --- this normal functioning of the created order does not require any additional Divine Word "Be!" all of these matters are indeed the outcome of the "Word of Allah". However, it is entirely possible that the reference to the "Words of my Lord" and the "Words of Allah" as being "limitless" in the following two ayaat refers to things and matters in the created order. Just as the

Knowledge and Wisdom of Allah is limitless, it is entirely possible that this “inexhaustibility” is partially reflected in the domain of created order.

The virgin birth of Isa d (Jesus) is an illustration of this very process where the Divine Word replaced a missing link in the chain of causation by virtue of which a woman would get pregnant under normal circumstances. According to the normal physical and biological laws the birth of an individual requires both the male and female contribution towards a fertilized ovum which then develops into a human child. But in case of the birth of Isa d (Jesus), the contribution of the father is completely missing --- meaning that one of the links in the normal chain of the causal factors of human birth is not there --- and it is this missing link which is replaced by the Divine Word “Be!” Consequently, it is for this very reason that Isa d (the son of Maryam) is referred to in the Qur'an as “…..a Word from Allah”, “…..a Word from Him”, “His Word”.

Opinion of Dr Israr Ahmad

Dr Israr Ahmad appreciates Charles Darwin (1809-82) for his long and arduous voyage on Beagle and accumulation of fossils, promoting the theory that organisms tend to produce offspring varying slightly from their parents. He identifies the miserable failure of Darwin to explain the mechanism by which new species may arise widely different from each other and from their common ancestors.

Briefly, the theory of Darwin is that it is in the nature of life to vary. The whole organism and its individual organs and functions are subject to minute variations which occur blindly and haphazardly in any and every direction. Moreover, all species of animals have to struggle against a hostile environment, against their enemies and dangers of every kind in order to feed and protect themselves and their offspring.

The absence of purpose is the very essence of Darwinism. Variations arise fortuitously out of the organism and present themselves for selection in the struggle for existence. They are not actively acquired by means of struggle. If there is any purpose in evolution, it is, according to Darwin, apparent and not real.

Darwinists endeavor to explain the emergence of even the most complicated organ such as the eye and the most puzzling function such as the instinct of a bee, as a result of a series of accidents. This position is, of course, completely antagonistic to that of teleological evolutionists like Lamarck, Bergson and Iqbal.

Darwinism has passed through several stages and undergone several differentiations and transformations since its birth but its essence and main features have remained the same. Although it is primarily a biological theory, the Darwinists endeavor to use it to answer all questions relating to Psychology, Metaphysics, Logic, Epistemology, Ethics, Aesthetics and even History, Economics and Politics. Indeed, if Darwinism with its radical opposition to teleology and its stress on mechanical selection is really an adequate explanation of a part of the evolutionary process, it ought to be an adequate explanation of the whole of it.

Naturally, Darwinism has deeply influenced all subsequent developments of the human and social sciences. It has yielded many bitter fruits and the bitterest of them all is Marxism and worse still totally materialist interpretation of history, morals and religion.

Thomas Huxley and Ernest Haeckel championed the cause of evolution and defended the views of Darwin both as regards the occurrence of evolution and the factors responsible for its occurrence. Their critics, on the other hand, refuted these views wholesale with the result that Darwinism and evolution came to be identified with each other on both sides.

While the scientists have now accepted the fact of evolution, the controversy about Darwinism still persists although it is perfectly true to say that Darwinism is rapidly losing its ground and its opponents are already on the way to a complete victory. Indeed, if we take into consideration what we hear and read in scientific circles and journals time and again, we have to conclude that even now there is no dearth of serious students of evolutionary science who believe that Darwinism has already collapsed.

"My theory", said Darwin "will lead to a whole philosophy". He was right. But the philosophy that results from the theory of Darwin is a terrible shock to man's justified conviction of his own dignity over the rest of creation, which he thinks he enjoys by virtue of the nobility of his mind and spirit and the sanctity of his reason and free-will. For the implications of this theory are that the whole of this wonderful world of life is nothing but the blind and fortuitous play of the 'reckless' forces of nature. It is completely devoid of plan or method.

The spirit of man revolts against such ideas and their scientific accuracy instantaneously becomes doubtful. No wonder, therefore, that there were soon many powerful rebels in the Darwin's own camp. Wallace, the proponent of the Darwinian theory of the struggle for existence, ultimately came to believe in a spiritual explanation of evolution. Romanes, a prominent disciple of Darwin, ended as a Christian theist.

Some of the more notable founders of constructive theories of evolution opposed to Darwinism include Lamarck, Etienne Geoffroy, St. Hilaire, Ersner, Kassowtz, W. Haacke, Nageli, De Vries, Driesch and Bergson. Suffice it to say that the commonest and the most prominent feature of all these theories is that a living organism has not to wait passively for natural selection and prolonged accumulation of minute variations. On the other hand, there is a hidden purpose working in and through the organism that enables it spontaneously and of itself to bring forth what is necessary for self maintenance, often what is new and different with an extensive range of possibilities.

The emergence of conscious purpose in man itself, as one of his most important characteristics, constitutes evidence in favor of purposive evolution. The very word evolution implies purpose, since it means growth or movement towards continuously higher stages of development. If the universe has really evolved and developed up to its present stage, does it not mean that purpose, one of the most precious products of its development, was implied in it from the very onset, that purpose of some sort was present at every stage of its development. At the material stage it was entirely unconscious, at the biological stage it was half conscious, at the human stage it became completely conscious and deliberate.

There is a need for a perceptive approach to man's origin and end that can contextualize man's perception of self within a framework of comprehensibility and meaning. The scientific evolutionary narrative provides modern man with a terrestrial lineage of development that commences with a single replicating cell and ends with the spectacular transition from animal primate to conscious human. As a result, the Godless Darwinian evolutionary theory has completely recast the mindset and mentality of people wholesale with its hypothetical explanation of man's origin and by implication his spiritual and

ultimate destiny. That also explains why both Karl Marx and Fredrich Engels highly appreciated the contents of Darwin's books and Marx even desired to dedicate his book "Das Capital" to Darwin.

Darwin himself had a problem with the myriad creation that reflected, if nothing else, 'stunning design'. He, for example, well understood the development of the eye as a serious problem for his theory. He wrote: "To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic observation, could have been formed by natural relation, seems, I confess, absurd in the highest degree." (Quoted in Stephen Jay Gould, Ever Since Darwin, New York, 1977, p.103)

Let us, at this point, look at the guidance and knowledge provided by the Holy Qur`an. Verse 30 of Surah Al-Anbiya asserts: "We made from water every living thing. Will they not then believe?" (21:30) That all life began from water (as a result of chemical reaction between water and crust of the earth) is a conclusion to which our latest knowledge in biological science points. Apart from the fact that protoplasm, the original basis of living matter, is a liquid or semi-liquid and in a state of constant flux and instability, it is an established fact that land animals, like the higher vertebrates, including man, show in their embryological history, organs like those of fishes, indicating the watery origin of their original habitat. The constitution of protoplasm, as a matter of fact, is about 80 to 85 percent water.

The most profound appreciator of the deep meaning and significance of the Qur`anic themes and the Rumi of our age --- Allama Muhammad Iqbal --- has also expressed the idea of evolution in his poetry. He not only mentions the idea, he also opines about its causes, starting-point and ultimate reaches and the objectives of the evolutionary process. He discusses and expounds these ideas at such a lofty level of sophistication and intellectual vision that people of ordinary mental capacity can hardly comprehend the real import of those verses. It is, however, reassuring to note that an able expounder of the wisdom of Iqbal --- Dr. Muhammad Rafi-ud-Din --- has made his ideas understandable and easy to grasp in an article published in the April 1960 issue of "Iqbal Review".

Dr. Rafi-ud-Din has pointed out three stages of the long process of evolutionary developments viz., firstly physico-chemical evolution, secondly biological evolution and, thirdly ideational or ideological evolution. This, in effect, means that the second stage of the descent of creation coincides with the first stage of evolutionary process. That is to say, as a result of the "Big Bang", tiny particles appeared which synthesized together to constitute "atoms" which in turn collectively constituted "molecules". Combination and recombination of these molecules in due course of time led first to the formation of inorganic compounds and then ultimately to the formation of organic compounds which represents the completion of the first stage of evolution. It must be noted here that we have characterized this stage also as the climax and completion of the third stage of the process of descent which has been expressed eloquently by Mirza Abdul Qadir Baydil in the words "two realms (of "khalq" and " amr") consumed …" But since this third stage of the descent of creative impulse was also the first stage of evolution, biological evolutionary process started from this very phase.

Allah is not immanent in the cosmos in the Neo-Platonic sense; He is a transcendent and a personal Allah to which man can turn directly for guidance. Although Allah is transcendent, the creation is not detached from Him, rather it is an expression, effect or concretization of the Divine performative word of "kun". The myriad forms of the created universe are differentiated in time and space, and are not part of the process of emanation.

The following two verses of the Holy Qur`an clearly and unambiguously state that before the appearance of Adam (AS), his prefigured primates in the form of "bashar" were created by Allah through a long evolutionary process:

1. "Behold! Thy Lord said to the angels: I am about to create man (bashar) from clay." [Sa`d, 38:71]

2. "Behold! Thy Lord said to the angels: I am to create man (bashar) from sounding clay, from mud moulded into shape." [Al-Hijr, 15:28]

The word bashar used in these verses can refer to Homo, the genus of primates of which, according to evolutionary theory, modern humans (Homosapiens) are the present-day representative. The genus Homo is believed to have existed for at least two million years and modern humans first appeared in the Upper Paleolithic. In this sense, bashar can denote hominid (or hominoid) --- a primate of a group that includes humans (only in the sense of living physical body prior to the breathing of Divine spirit into it), their fossil ancestors, and the bipeds. There is very strong insinuation in the Qur`an that Adam (AS) was one chosen bashar and he became Adam (AS) after Allah blew into him out of His spirit --- a primordial truth to which atheistic evolutionists turn a blind eye. The Qur`anic verses, which speak of selection of Adam (AS) d from amongst a species of humans, are the following: i) "Allah did choose Adam (AS) and Nuh, the family of Ibrahim, and the family of Imran above all people." [A`le Imran, 3:33] ii) "It is We who created you (in the plural) and gave you shape; then We bade the angels: Bow down to Adam (AS). And they bowed except Iblees; he refused to be of those who bow down." [Al-A`raf, 7:11].

Adam's (AS)being chosen by Allah and similarly creation of a multitude of human primates and crowning one individual with the title and status of "Adam (AS)" is quite significant. This essential difference is definitely due to the addition of spiritual soul --- a new and highest metaphysical element --- to the animal part of man. And this, of course, was the result of Allah's breathing into him out of His own spirit and thus infusing in him the metaphysical element of soul. It is in this perspective that we can appreciate verse 75 of Surah Saad in which Allah says that He created Adam (AS) with 'His two Hands' (yadayya). This perhaps is a subtle allusion to the fact that as Adam (AS) is a composite being of material/ physical body and a spiritual soul i.e. both a`alam-e-Khalq and a`alam-e-Amr were fused together to constitute Adam (AS).

The Adamic first man is none other than the primordial man by virtue of his being made "in the image" (imago Dei) of a Divine Being. Adam (AS) is thus man in divinis, human in his element of khalq but reflective of Divine qualities and attributes as far as soul (the element of Amr) is concerned. According to an authentic Hadith, particular soul (which was kept in the repository of souls) is aligned by an angel to each and every embryo developing in the womb of its mother. Thus, the entire progeny of Adam (AS) too consists of both a corporeal and a spiritual element. It is this very spiritual element in man that makes him Allah's representative and vicegerent on earth.

The crowning of Adam (AS) as vicegerent of Allah on earth was finalized by the Divine Commandment for all angels to prostrate before Adam (AS) thus submitting to his superiority as a deputy of the Lord on earth. This order was rejected and flouted by Azazeel (a jinn, included in the lower cadres of angels on the basis of his devotion and service). Verse 34 of Surah Al-Baqarah reads:

> "And behold, We said to the angels: Bow down to Adam (AS); and they bowed down. Not so Iblees, he refused and was haughty; he was one of those who reject Faith." (2:34).

Addition and infusion of spirit or soul in the progeny of Adam (AS) is subtly referred to in verse 14 of Surah Al-Mominun where, first, the variegated stages of the development of human fetus in a mother's womb are described in detail and then its formation on an entirely different pattern is stated --- viz. growing into a human being with a soul equipped with all its capacities and responsibilities.

Human Embryology and the Qur'an

Sadaat analysis

Human Embryology and the Holy Quran: An Overview was presented by (Sadaat 2009). Aristotle thought that foetus was formed *in uterus* from a coagulum of blood and seed from menstrual blood. Greeks and Europeans thought that *foetus* was created from menstrual blood, or else they thought that foetus was fully created and was in a miniature form in sperm or in ovule. In 1604 Fabricus came out with excellent drawings of chick embryo. Malphigi in 1672 who is considered father of modern embryology thought poultry eggs contained a miniature chick and others thought that human being was fully formed in sperm or an ovum. Spallanzani showed the necessity of both ovum and sperm for the development of a new individual. It was in 19th century that the development cycle of mammalian ovum was discovered. Developmental biology of human beings; also applicable to other mammals, has been narrated by Prophet Muhammad (SAW).

> We (Allah) created man from a quintessence of clay. We then placed him as a nutfah (drop) in a place of settlement, firmly fixed, then We made the drop into an alaqah (leech like structure), and then We changed the alaqah into a mudghah (chewed like substance),then We made out of that mudghah, izam (skeleton,bones),then We clothed the bones with lahm (muscles,flesh) then We caused him to grow and come in being and attain the definitive (human)form. So, blessed be God, the best to create. (Quran: 23:12-14)

So if we arrange these stages chronologically we might come up with something like this:

- Nutfah amshaj (drop that is mixed) this stage covers the period from fertilization to implantation. This stage is further divided into: (present day germinal stage): Khalq, Taqdir, Harth.

- Takhleeq (present day embryonic): this stage extends from the beginning of the 3rd week until the end of the 8th week and covers the developmental events. This stage is further divided into: Alaqah (leech-like), Mudghah (somites), Izam (skeleton) and Laham (muscles).

- Nash"ah: (Growth) [present day Foetal stage] During this period the shaping and modelling are active; the external appearance develops in such a way that foetus becomes recognizably human. It lasts till the completion of pregnancy.It is further divided into: An-nashaa-Khalaqakha (from 9–26wks) and Al Hadana-al Rahamiya (from 26 wks to full term). This could be an apt way of classifying the various stages of human development.

Scientifically we came to know about these stages in 19th or 20th century and before that there is no detailed mention. Many Muslim scholars held their view as per this Hadith mentioned and discussed by Ibn-Hajer (852 H:1448 AD) in Fath-Al-Bari (Vol 2; p 447–491). It is since 19th century that we have come

to know the precise steps and stages in the development of various stages in human development. The Muslim scholars were overwhelmed and started collecting data and compiling it.

It was two decades ago that all the data was given to famous Scientists, Anatomists and Embryologists. Actually this work was started at the King Abdul Aziz University in Jeddah. One of the most eminent embryologist Keith Moore surveyed a lot and was overwhelmed to know that Muslims had this knowledge since seventh century. He studied a lot and said that he would not have been able to answer most of the questions 30 years back due to lack of scientific knowledge. In 1981, during the 7 th Medical Conference in Dammam, Saudi Arabia, Moore said, "It has been a great pleasure for me to help clarify some statements in Quraan about human development. It is clear to me that these statements must have come to Muhammad from God, because almost all of this knowledge was not discovered until many centuries later. This proves Muhammad to be Messenger of God.

Subhan Qureshi analysis

Qureshi (2011) included Quranic Wisdom in his book on reproductive physiology. The Qur'an states,

> "Verily, we created man of fluid-drop (nutfa) mingling (amshaj), in order to try him. So, We gave him the gift of hearing and sight". (Al-Qur'an, 76:2)

Two words are used in Qur'an for semen, i.e., nutfa for drop of water and amshaj is structure consisting of various substances. These statements reveal the miraculous nature of Qur'an. The verse rightly describes the nature of semen which on the one hand is a drop of water and on the other, is a mixture of numerous substances, comprising spermatozoa, nutrients, enzymes, hormones and other factors.

Sex of mammalian progeny is determined by the male or female sex chromosome bearing spermatozoa. X bearing spermatozoon will give rise to female young one, if it fertilizes the ovem. A Y bearing spermatozoon will lead to birth of a male young one. According to the Qur'anic verse:

> "That He created the pairs, male and female from a fluid drop sperm, as it is emitted". Al-Qur'an, 53:45-46.

It confirms that man's sex is determined at the time of semen ejaculation. The Prophet Muhammad (SAW) told the people that the sperm, nutfa, was responsible for determining the sex of young one (through X or Y bearing spermatozoa).

Scientists have discovered very recently that sex of an embryo is determined by the type of spermatozoa fertilizing the ovum and sperm is a cell found in the ejaculated semen. On the one hand the whole world was not aware of the fact that semen determines the sex of the young till the beginning of the 20th Century (Mittwoch 2005). On the other hand, the Qur'an narrated the story very clearly 14 centuries earlier. Spermatogenesis takes place in the testicles, which are a continuation of gonocytes, originating near the kidneys, located at the back and then migrating down to the abdominal cavity at the end of pregnancy. The Qur'an has stated it thus:

> "And remember when your lord brought forth from the children of Adam, from their lions, their seeds. (Al-Qur'an, 7:172).

The origin of progeny has been at the region of the back which is the site of formation of embryonic testicles.

The bi-potential gonad is the common precursor of mammalian gonads,during embryogenesis. It possesses the capacity of developing into either testis or ovary. Generically, sex is determined during fertilization as an ovum can either be fertilized with Y or X bearing spermatozoa, leading to formation of male or female embryos. However, the bipotential gonad still retains the capacity to lead to formation of testis or ovary and it is driven by the presence of Y chromosome and the expression of Y linked Sry gene. The Sry gene in the male embryos stimulates the cascade of events which leads to development of testis and suppression of ovarian development. In the female embryos the Sry gene is absent and the bi-potential gonad converts into ovary.

After conception the male and female embryonic genital ducts (Wolffian and Mullarian ducts) are found in the bi-potential gonads up to 11th day. With the expression of Sry gene, the bi-potential gonad develops into testis and endocrine hormones are produced, leading to regression of Mullarian ducts and subsequently the Wolffian ducts develop into epididymis, vas deferens, seminiferous tubules and testicular descent. In the female embryos the absence of Sry genes leads to development of the female reproductive tract and endocrine hormones to be secreted by ovary. Partial expression of Sry genes give rise to development of rudimentary sexual organs of both sexes and individual comes as hermaphrodite.

Qur'an mentions the sex differentiation in mammal during embryogenesis, as transformation of alaqa into mudgha, in a rapid way completing in two days, 24 th and 26 th day post-conception. The rapid change has been expressed with the word "fa" meaning "then" and pointing at the rapid development of transformation. Qur'an says:

> "Then We changed the alaqa, leach like clot, into a mudgh, chewed lump". Al-Qur'an, 23:14.

We observe different conjunctive articles which reflect the difference in embryonic stages. The alaqa has been mentioned as the second stage in embryonic development and described in several verses. He the Almighty says:

> "Was he not a drop of semen emitted? Then he became a leech-like clot, then did Allah make and fashion him in due proportion". And of him He made two sexes, male and female. Al-Qur'an, 75:37-39

Survival of human beings and other mammals

Human and other mammalians' babies are born fully equipped with all the necessary senses of sight, hearing, smell, taste, and touch. However, some of these senses are less precise than others (CHOP, 2020). Below are some aspects of newborn senses:

Vision: A newborn's eyes are a little more than half the size of an adult's eyes. They grow the most in the first year, then slowly grow until puberty. Most Caucasian babies have light gray or blue eye color, but this often changes by 6 months of age. Over the first few months, babies may have uncoordinated eye movements and may even appear cross-eyed. Babies are born with the ability to focus only at close range--about 8 to 10 inches or the distance between a mother's face to the baby in her arms.

Hearing: During pregnancy many mothers find that the baby may kick or jump in response to loud noises and quiet with soft, soothing music. Hearing is fully developed in newborns. Babies with normal hearing should startle in response to loud sounds, pay quiet attention to the mother's voice, and briefly stop moving when sound at a conversational level is begun. Newborns seem to prefer a higher-pitched voice

(the mother's) to a low sounding voice (males). They also have the ability to tune out loud noises after hearing them several times.

Taste: Taste buds begin forming early in fetal development. It is known that babies prefer sweet tastes over sour or bitter tastes. Babies also show a strong preference for breast milk and breastfeeding, especially if they are breastfed and then offered formula or a bottle.

Smell: The brain's olfactory (smell) center forms very early in fetal development. Studies have found that newborns have a keen sense of smell. Within the first few days they will show a preference for the smell of their own mother, especially to her breast milk.

Touch: Throughout the last months of pregnancy, a baby is snugly cocooned in the uterus, with arms and legs tucked. At birth, babies are thrust into a bright, cold world, where their arms and legs can suddenly move freely. This new freedom can make babies frantic and they may flail and thrash about. Placing a hand on the baby's abdomen, or cuddling close can help a baby feel more secure. Swaddling (wrapping snugly in a blanket) is another technique for babies who need to feel tucked and secure.

The most striking behavioral characteristic of mammals is their learning ability (Ewer 1968). Compared with other animals, mammals can learn faster, learn more, remember more and show more insight. Correlated with these abilities is the possession of well-developed sense organs, particularly the distance receptors concerned with olfaction, hearing and vision. These make it possible for behavior to take into account and to be adapted to, an enlarged world, not limited to the objects in contact with or very close to the animal. Learning and memory enlarge this world still further, adding a time dimension and so taking in the past as well as the present.

Human beings and all living animals are created and sustained by Allah SWT.

> And Allah created you from dust, then from a sperm-drop; then He made you mates. And no female conceives nor does she give birth except with His knowledge. And no aged person is granted [additional] life nor is his lifespan lessened but that it is in a register. Indeed, that for Allah is easy. (Al-Qur'an, 35:11).

The Creator sustaining living beings

God the Sustainer is the conception of God who sustains and upholds everything in existence (Wikipedia 2020). Al Qayyum, sometimes rendered "The Sustainer" is one of the 99 Names of God in Islam. "Creator, Sustainer, Redeemer" is reportedly a "common phrase" in Protestantism in the United States, specifically in Baptist liturgy (Scirghi 1999).

The Vidas reference

The conception of Deity in a sustaining/conserving/preserving mode is used in Hindu theology where the Godhead, or Trimūrti in Sanskrit, consists of Brahma the Creator, Vishnu the Preserver/Sustainer, and Siva the Destroyer.

Vishnu is one of the principal deities of Hinduism. The "preserver" in the Hindu triad (Trimurti), Vishnu is revered as the supreme being In Vaishnavism as identical to the metaphysical concept of Brahman (Atman, the self, or unchanging ultimate reality), and is notable for adopting various incarnations

(avatars such as Rama and Krishna) to preserve and protect dharmic principles whenever the world is threatened with evil, chaos, and destructive forces. In the Smarta Tradition of Hinduism, Vishnu is also one of the five equivalent deities worshiped in Panchayatana puja.

Mahavishnu is a principal deity in Hinduism, known as the Absolute protector of the universe beyond human comprehension and all attributes. The term Mahavishnu refers to that Absolute truth Brahm or Brahman (impersonal invisible aspect) then as Paramatma (Aspect beyond the understanding of human soul) and finally as Sarvatma (incarnating for bringing perfection). So bhakti (loving devotion) goes to Sarvatman (Krishna or Rama avatars or incarnations of Vishnu, Narayana bringing both peace and perfection of the living beings).

Mahavishnu is said to lie in the Causal Ocean or the Karanodak. He puts the seed of this material universe in Mahāmāyā by glancing at her. Mahāmāyā remains the ever obedient material energy of the Supreme Lord. All the natural elements including sky, fire, water, air and land are created along with mind, intelligence and false ego. After this, Mahavishnu enters each of the many universes so created as Garbhodaksayi Vishnu, who lays down in each and every of these individual material universes (Brahmandas).

Biblical reference

In the Christian theology, the described doctrine is supported by the following biblical and Deuterocanonical references:

> "For you love all things that exist, and detest none of the things that you have made; for you would not have made anything if you had hated it. How would anything have endured, if you had not willed it? Or how would anything not called forth by you have been preserved? You spare all things, for they are yours, O Lord, you who love the living." (Wisdom 11:21-26)
>
> "My Father is always at his work, even to this very day; and I am also working. (John 5:17)
>
> "He upholds all things by the word of his power. (Hebrews 1:3)

Moreover, there are other relevant places in the doctrinal Christian literature, for example: St. Augustine comments on John 5:17: Let us therefore believe that God works constantly, so that all created things would perish, if his work were withdrawn.

The Catechism of the Catholic Church says in 301: With creation, God does not abandon his creatures to themselves. He not only gives them being and existence, but also, and at every moment, upholds and sustains them in being, enables them to act and brings them to their final end. Recognizing this utter dependence with respect to the Creator is a source of wisdom and freedom, of joy and confidence.

Paul challenges Stoic pantheism and Epicurean materialistic deism by testifying that the God who made the world and everything in it is the Lord of heaven and earth (Ps 146:6; Is 42:5). The implication for worship is that God does not live in temples built by hands. God's self-sufficiency is affirmed in the Old Testament (Ps 50:7-15) and developed in Jewish prayer (2 Macc 14:35; 3 Macc 2:9). It was also a tenet of Epicureanism. Paul brushes aside the necessity, let alone appropriateness, of idolatrous worship servicing the divine nature by affirming that, conversely, it is God who gives all men life and breath and everything else (Gen 1:29; 2:7; 9:3; Is 42:5; Acts 14:17).

What good news Paul had for the Epicureans and Stoics living as they did under impersonal chance or inexorable fate! Behind or within reality stands neither of these but rather a gracious, personal Creator, Ruler and Sustainer of all. For modern scientific humanity, living as it does within an impersonal universe that has evolved quite by "chance" from the big bang to the last whimper of a dark and frigid night without starfire, Paul's message is also very good news. And for postmodern humanity this gracious, personal God breaks the bonds of pantheistic "karma."

Paul now concentrates on humankind. He affirms the creation of human beings by a direct act and declares that God's design was for various cultures to cover the face of the earth in a harmonious patchwork of diversity (Gen 1:28; 9:1, 7; 10:5, 20, 31-32). That harmony is born of God's governance of the time period and the space each culture would inhabit (Deut 32:8; Ps 102:13; Dan 2:36-45; compare Stoics on divine providence—Seneca the Younger De Providentia; see Winter 1993:133-36). While Stoicism looked at humankind in its diversity and urged it to consider itself one community, "even as a herd that feeds together and shares the pasturage of a common field" (Plutarch Moralia 329B), Paul affirms both our unity and our diversity.

Quranic reference

> “He it is Who spread the earth for you; and made in it paths for you, and sent down water from the sky, and then through it We brought forth many species of diverse plant. So eat yourself and pasture your cattle. Surely there are many Signs in this for people of understanding. From this very earth We created you and to the same earth We shall cause you to return, and from it We shall bring you forth to life again”. Al Qur’an, 20:53-55.

These verses mention the provisions and continue to the people and animals in form of availability of Earth, paths, water, plants, cattle and diet for humans and animals. Earth has been mentioned as the place of birth and the place of rest for the body of humans and rebirth from Earth on the “Day of Resurrection”.

> “We also sent down blessed water from heaven, wherewith We caused gardens and harvest-grain to grow, and tall palm-trees with their thickly-clustered spathes; all this as sustenance for Our servants. And thus We do bring the dead land back to life with water. Such shall be the coming forth (of human beings from the earth)”. Al Qur’an, 50:9-11.

These verses mention the rains from sky, nurturing gardens, field crops, date palms, as sustenance for the believers. And the water cause the things to grow on an arid land, which may help in understanding the rebirth of humans on the Day of Judgment.

> “There is not a single moving creature on the earth but Allah is responsible for providing its sustenance. He knows where it dwells and where it will permanently rest. All this is recorded in a clear Book.” Al Qur’an, 11-6.

This verse mentions the claim of Allah (SWT) that He is the Sustainer of the Universe. All living creatures are provided food, water, oxygen and other requirements of their bodies. Nobody else can make such a claim. And the living creatures need Sustainer to remain alive and get protected from catastrophes.

> “O people, remember Allah's favor upon you. Is there any creator, apart from Allah, who provides you your sustenance out of the heavens and earth? There is no God but He. Whither are you, then, being misdirected?” Al Qur’an, 35:3.

Allah SWT asks the people whether there is any creator apart from Him, who meets the requirements of the people. Then He answers himself, no, only He is the only God. Then Allah SWT asks again why the people are misguided?

> “Ask them: 'Who provides you with sustenance out of the heavens and the earth? Who holds mastery over your hearing and sight? Who brings forth the living from the dead and the dead from the living? Who governs all affairs of the universe?' They will surely say: 'Allah.' Tell them: 'Will you, then, not shun (going against reality)? Such, then, is Allah, your true Lord. And what is there after truth but error? How, then, are you being turned away?” Al Qur’an, 10:31-32.

In these verses Allah SWT ask humans about provision of sustenance, control over hearing and sight, creating living beings, and governing the whole Universe. Then He ask why people ignore Him as after truth there is only error?

The Cosmic Calendar – Scientific and Quranic Perspectives

Forestier (2018) presented the Cosmic Calendar introduced by Carl Sagan, American Astrologist, Cosmologist and astrophysicist, who collapsed the entire history of the Universe 13.8 billion years, into a single year. In his book ‘The Dragon of Eden’, and his TV series Cosmos, he declared midnight of the first January as the start of time, the Big Bang and 31st of December, as this very moment we are living in. Hydrogen starts to form 14 seconds later, January 10 the first stars ignite, January 13 galaxies appear, March 15 our galaxy milky way appears, at the start of September the Solar System is formed.

On September 21st single cell organisms appeared. December 5 multicellular organism appears, December 20 land animals appear, December 25 welcomes to dinosaurs, December 26 mammals emerge, December 30 dinosaurs die, 8 minutes ago humans appear, 4 second ago Prophet Jesus comes, 4 seconds ago Prophet Muhammad comes, in the last second science and technology, the American Revolution, World War I and II, moon landing, Donald Trump becomes President.

Carl Sagan Cosmic Calendar not only helps us in understanding the age of the Universe but also explains the two groups of verses of the Holy Qur’an. In the first group God says that, “We have created the Heavens and the Earth in six days” and in the second group He says that “We have created the Heavens and the Earth and what is in between, in six days”.

It reveals the Qur’anic Cosmic Calendar introduced 1400 years back. The two calendars have similarities that on human timescale is explained in human format, for better understanding. The two calendars collapsed the cosmic history into 365 and 6 days respectively; age of the Earth in both of them is 2/3 of cosmic age in both the calendars the scale continues to condense to accommodate the increasing age of the Cosmos.

3. The Purpose of Creation

The purpose of creation is a topic that puzzles every human being at some point in his or her lifetime (Philips 1995). Everybody at some time or another asks themselves the question "Why do I exist?" or "For what purpose am I here on earth?" The variety and complexity of the intricate systems which constitute the fabric of both human beings and the world in which they exist indicate that there must have been a Supreme Being who created them.

Design indicates a designer. When human beings come across footprints on a beach, they immediately conclude that a human being had walked by there some time previously. No one imagines that the waves from the sea settled in the sand and by chance produced a depression looking exactly like human footprints. Nor do humans instinctively conclude that they were brought into existence without a purpose. Since purposeful action is a natural product of human intelligence, humans conclude that the Supreme Intelligent Being who created them must have done so for a specific purpose. Therefore, human beings need to know the purpose for their existence in order to make sense of this life and to do what is ultimately beneficial for them.

The Hindu Concept

For the ordinary Hindu, the main aim of worldly life lies in conforming to social and ritual duties, to the traditional rules of conduct for one's caste the karma path (Philips 1995). The Hindu scriptures teach that there are many gods, incarnations of gods, persons of God and that everything is God, Brahman. In spite of the belief that the self (atman) of all living beings is actually the self athman, an oppressive caste system evolved in which the Brahmans, the priestly caste, possess spiritual supremacy by birth. They are the teachers of the Vedas and represent the ideal of ritual purity and social prestige. On the other hand, the Sudra caste are excluded from religious status and their sole duty in life is "to serve meekly, the other three castes and their thousands of sub-castes.

According to Hindu monist philosophers, humankind's purpose is the realization of their divinity and-following a path (marga) to emancipation (moksha) from the wheel of rebirth-the reabsorption of the human soul (atman) into the ultimate reality, Brahman, for those following the bhakti path, the purpose is to love God because God created humankind to "enjoy a relationship-as a father enjoys his children" (Srimad Bhagwatam). For the ordinary Hindu, the main aim of worldly life lies in conforming to social and ritual duties, to the traditional rules of conduct for one's caste, the karma path.

Although most of the religion of the Vedic texts, which revolves around rituals of fire sacrifice, has been eclipsed by Hindu doctrine and practices found in other texts, the absolute authority and sacredness of the Veda remains a central tenet of virtually all Hindu sects and traditions. The Veda is composed of four collections, the oldest of which is the Rigveda ("Wisdom of the Verses"). In these texts, God is described in the most confusing terms.

The religion reflected in the Rigveda is a polytheism mainly concerned with appeasing deities associated with the sky and the atmosphere, the most important of which were Indra (god of the heavens and rain), Baruna (guardian of the cosmic order), Agni (the sacrificial fire), and Surya (the Sun). In later Vedic texts, interest in the early Rigvedic gods declines, and polytheism begins to be replaced by a sacrificial pantheism to Prajapati (Lord of Creatures), who is the All. In the Upanishads (secret teachings concerning cosmic equations), Prajapati merges with the concept of Brahman, the supreme reality and substance of

the universe, replacing any specific personification, thus transforming the mythology into abstract philosophy. If the contents of these scriptures were all that human beings had to choose from for guidance, one would have to conclude that God hid both Himself and the purpose of creation from humankind.

While some Hindus believe in the existence of three gods, some believe in thousands of gods, and some others in thirty-three crores, i.e. 330 million Gods (Naik 2020). However, learned Hindus, who are well versed in their scriptures, insist that a Hindu should believe in and worship only one God. The most popular amongst all the Hindu scriptures is the Bhagavad Gita. Consider the following verse from the Gita:

> "Those whose intelligence has been stolen by material desires surrender unto demigods and follow the particular rules and regulations of worship according to their own natures." [Bhagavad Gita 7:20]

The Upanishads are considered sacred scriptures by the Hindus. The following verses from the Upanishads refer to the Concept of God:

> "Ekam evadvitiyam": "He is One only without a second." [Chandogya Upanishad 6:2:1]
>
> "Na casya kascij janita na cadhipah." "Of Him there are neither parents nor lord." [Svetasvatara Upanishad 6:9]2
>
> "Na tasya pratima asti" "There is no likeness of Him." [Svetasvatara Upanishad 4:19]
>
> "Na samdrse tisthati rupam asya, na caksusa pasyati kas canainam." "His form is not to be seen; no one sees Him with the eye." [Svetasvatara Upanishad 4:20]

Vedas are considered the most sacred of all the Hindu scriptures. There are four principal Vedas: Rigveda, Yajurveda, Samveda and Atharvaveda. The following verses from the Yajurveda echo a similar concept of God:

> "na tasya pratima asti" "There is no image of Him." [Yajurveda 32:3]
>
> "shudhama poapvidham" "He is bodyless and pure." [Yajurveda 40:8]
>
> "Andhatama pravishanti ye asambhuti mupaste" "They enter darkness, those who worship the natural elements" (Air, Water, Fire, etc.). "They sink deeper in darkness, those who worship sambhuti." [Yajurveda 40:9]7 (Sambhuti means created things, for example table, chair, idol, etc.)

The Judeo-Christian Concept

A survey of the Bible leaves the honest seeker of truth lost. The Old Testament seems more concerned with laws and the history of early man and the Jewish people than with answering the vital question concerning humanity's creation.

ln Genesis, God creates the world and Adam and Eve in six days and 'rests' from His work on the seventh. Adam and Eve disobey God and are punished and their son Cain kills their other son Abel and goes to live in the land of Nod. And God was 'sorry' that he had made man. Why are the answers not there in clear and unmistakable terms?

In Genesis 6:6 it is stated," When men began to multiply on the face of the ground, and daughters were born to them, the sons of God saw that the daughters of men were fair; and they took to wife such of them as they chose." Who are these "sons of God"? Each Jewish sect and each of the many Christian sects who followed them have their own explanations. Which is the correct interpretation? The truth is that the purpose of man's creation was taught by the prophets of old, however, some of their followers-in collusion with the devils-later changed the scriptures. The answers became vague and much of the revelation was hidden in symbolic language.

When God sent Jesus Christ to the Jews, he overturned the tables of those merchants who had set up businesses inside the temples and he preached against the ritualistic interpretation of the law practiced by the Jewish rabbis. He reaffirmed the law of Prophet Moses and revived it. He taught the purpose of life to his disciples and demonstrated how to fulfill it until his last moments in this world. However, after his departure from this world, his message was also distorted by some who claimed to be among his followers. The clear truth he brought became vague like the messages of the prophets before him. Symbolisrn was introduced especially through the "Revelations" of John, and the Gospel which was revealed to Jesus was lost. Four other gospels composed by men were chosen by Athanasius, a fourth century bishop to replace the lost Gospel of Jesus Christ and the 23 books of writings of Paul and others included in the New Testament outnumbered even the four versions of the gospel. As a result, New Testament readers cannot find precise answers to the question "Why did God create man?”

Perhaps the only common concept to most Christian sects regarding the purpose of mankind's creation is that God became man so that He could die at the hands of men to cleanse them of sin inherited from Adam and his descendants. According to them, this sin had become so great that no human act of atonement or repentance could erase it. God is so good that sinful man cannot stand before Him. Consequently, only God's sacrifice of Himself could save humankind from sin. However, if this is the purpose of creation and the prerequisite for everlasting life, why was it not taught by all the prophets? Why did God not become man in the time of Adam and his offspring so that all mankind would have an equal chance to fulfill their purpose for existence and attain everlasting life. Or did those before Jesus' time have another purpose for existence? All people today whom God has destined never to hear of Jesus also have no chance to fulfill their supposed purpose of creation. Such a purpose is obviously too limited to fit the need of humankind.

Opinion of Albert Einstein

The collection of essays and ideas "The World As I See It" gathers Einstein's thoughts from before 1935, when he was as the preface says "at the height of his scientific powers but not yet known as the sage of the atomic age" (Einstein 1920, 1930, 1950). "What is the meaning of human life, or, for that matter, of the life of any creature? To know an answer to this question means to be religious. You ask: Does it make any sense, then, to pose this question? I answer: The man who regards his own life and that of his fellow creatures as meaningless is not merely unhappy but hardly fit for life," wrote Einstein.

"How strange a lot of us mortals! Each of us is here for a brief sojourn; for what purpose he knows not, though he sometimes thinks he senses it. But without deeper reflection one knows from daily life that one exists for other people -- first of all for those upon whose smiles and well-being our own happiness is wholly dependent, and then for the many, unknown to us, to whose destinies we are bound by the ties of sympathy. A hundred times every day I remind myself that my inner and outer life are based on the labors of other men, living and dead, and that I must exert myself in order to give in the same measure as I have received and am still receiving...

A knowledge of the existence of something we cannot penetrate, our perceptions of the profoundest reason and the most radiant beauty, which only in their most primitive forms are accessible to our minds: it is this knowledge and this emotion that constitute true religiosity. In this sense, and only this sense, I am a deeply religious man... I am satisfied with the mystery of life's eternity and with a knowledge, a sense, of the marvelous structure of existence -- as well as the humble attempt to understand even a tiny portion of the Reason that manifests itself in nature."

Einstein received a letter from a 19-year-old Rutgers University student, who showed his despair at seeing no visible purpose to life and no help from religion. In responding to this poignant cry for help, Einstein offered no easy solace, and this very fact must have heartened the student and lightened the lonely burden of his doubts (Einstein 1950). Here is Einstein's response: "I was impressed by the earnestness of your struggle to find a purpose for the life of the individual and of mankind as a whole. In my opinion there can be no reasonable answer if the question is put this way.

If we speak of the purpose and goal of an action, we mean simply the question: which kind of desire should we fulfill by the action or its consequences or which undesired consequences should be prevented? We can, of course, also speak in a clear way of the goal of an action from the standpoint of a community to which the individual belongs. In such cases the goal of the action has also to do at least indirectly with fulfillment of desires of the individuals which constitute a society.

If you ask for the purpose or goal of society as a whole or of an individual taken as a whole the question loses its meaning. This is, of course, even more so if you ask the purpose or meaning of nature in general. For in those cases it seems quite arbitrary if not unreasonable to assume somebody whose desires are connected with the happenings.

Nevertheless, we all feel that it is indeed very reasonable and important to ask ourselves how we should try to conduct our lives. The answer is, in my opinion: satisfaction of the desires and needs of all, as far as this can be achieved, and achievement of harmony and beauty in human relationships. This presupposes a good deal of conscious thought and of self-education.

It is undeniable that the enlightened Greeks and the old Oriental sages had achieved a higher level in this all-important field than what is alive in our schools and universities.

Opinion of Stephen Hawking

Internationally famous physicist Stephen Hawking has gone back on his previous beliefs about the creation of the Universe, stating in a forthcoming book that physics, not God, made the Big Bang (Uncan 2010, Hawking and Mlodinow 2010).

Hawking has long held the position that while the Universe is governed by the laws of science, those laws were created by God. He said in 2008 at an event with the Pope, "The laws may have been decreed by God, but God does not intervene to break the laws."

But in his new book, The Grand Design, Hawking states that new theories show that a creator is "not necessary". A section printed in The Times says: "Because there is a law such as gravity, the universe can and will create itself from nothing. Spontaneous creation is the reason there is something rather than nothing, why the universe exists, why we exist. It is not necessary to invoke God to light the blue touch paper and set the universe going."

Instead, Hawking puts his faith into a form of string theory called M-theory, which hopes to present a unified theory in 11 dimensions that can account for every type of physical behavior. However, theorist Edward Witten believes that a formulation of M-theory will require an entirely new mathematical language to be developed.

Hawking says that the first blow to his beliefs came in 1992, when a planet was found orbiting a star that wasn't our Sun: "That makes the coincidences of our planetary conditions -- the single sun, the lucky combination of Earth-Sun distance and solar mass -- far less remarkable, and far less compelling as evidence that the Earth was carefully designed just to please us human beings."

The Guardian broke a story “Did the dying Stephen Hawking really mean to strengthen the case for God?” (Goff, 2018**). Sc**ientists have discovered a surprising fact about our universe in the past 40 years: against incredible odds, the numbers in basic physics are exactly as they need to be to accommodate the possibility of life. If gravity had been slightly weaker, stars would not have exploded into supernovae, a crucial source of many of the heavier elements involved in life. Conversely, if gravity had been slightly stronger, stars would have lived for thousands rather than billions of years, not leaving enough time for biological evolution to take place. This is just one example – there are many others – of the “fine-tuning” of the laws of physics for life.

Stephen Hawking's final theory sheds light on the multiverse. Some philosophers think the fine-tuning is powerful evidence for the existence of God. However, in his 2010 book The Grand Design (co-authored with Leonard Mlodinow), Stephen Hawking defended a naturalistic explanation of fine-tuning in terms of the multiverse hypothesis. According to the multiverse hypothesis, the universe we live in is just one of an enormous, perhaps infinite, number of universes. If there are enough universes then it becomes not so improbable that at least one will chance upon the right laws for life.

In Hawking’s older version of the multiverse hypothesis, there is great variety among the laws in different universes. In some gravity is stronger, in some weaker, and so on. However, physicists have come to see problems with such a heterogeneous multiverse, especially if the number of universes is

infinite. We work out the predictions of a given multiverse hypothesis by asking how probable our universe is according to that hypothesis. But if there is an infinite number of universes, that question becomes meaningless. And hence in his final paper, A Smooth Exit from Eternal Inflation?, Hawking and his co-writer, Thomas Hertog, formulate strict limits to the kind of universes that populate the multiverse.

The problem is that the less variety there is among the universes, the less capable the multiverse hypothesis is of explaining fine-tuning. If there is a huge amount of variation in the laws across the multiverse, it is not so surprising that one of the universes would happen to have fine-tuned laws. But if all of the universes have exactly the same laws – as in Hawking and Hertog's proposal – the problem returns, as we now need an explanation of why the single set of laws that govern the entire multiverse is fine-tuned.

Hertog seems not to agree, arguing that the paper does make progress on fine-tuning: "This paper takes one step towards explaining that mysterious fine-tuning ... It reduces the multiverse down to a more manageable set of universes which all look alike." However, this merely puts off the explanation of fine-tuning, for the result is that the laws underlying the generation of the multiverse are fine-tuned. We now need to explain not only why our universe is fine-tuned but why every universe is fine-tuned! In terms of explaining the fine-tuning, this is not a step forward but a step back.

All is not lost. Hawking was exploring models of the multiverse based on inflationary cosmology, and his paper casts doubt on the potential of this kind of multiverse to explain fine-tuning. But there is another source of scientific support for a multiverse theory: the "many worlds" interpretation of quantum mechanics. While physicists have been exploring inflationary explanations of fine-tuning, philosophers of physics have been exploring quantum mechanical explanations of fine-tuning. If, in the earliest period of our universe, our laws were shaped by the right kind of probabilistic process, the many worlds theory could furnish us with enough variety of laws across the many worlds so as to make it likely that one would be fine-tuned. We don't yet have evidence that our laws were shaped by such a process. But if the alternative is the postulation of a **supernatural creator**, then this seems like the more plausible proposal.

There is still hope for a scientific account of fine-tuning. However, by ruling out one of the two scientifically credible options for doing this, Hawking and Hertog have slightly strengthened the alternative explanation in terms of God. It is ironic that the atheist Hawking should, in his final contribution to science, make God's existence less improbable.

The Quranic Concept

God is not the author of confusion, nor does He wish difficulty for mankind (Philips 1995). Consequently, when He revealed His final communication to humankind one thousand four hundred years ago, He ensured that it was perfectly preserved for all of the generations of human beings to come. In that final scripture, the Qur'an (Koran), God revealed His purpose for creating mankind and, through His last prophet He clarified all of the details which man could comprehend. It is on the basis of this revelation and the prophetic explanations that we will analyze the precise answers to the question "Why did God create man?"

From the perspective of humankind, the question "Why did God create man?" implies "For what purpose was man created? "In the final revelation, this question is answered without any ambiguity. Humans are first informed by God that every human being is born with an innate consciousness of God. In Chapter al-A'raf: Allah said:

> "Remember, when your Lord extracted from the loins of Adam's children their descendants and made them testify [saying]: 'Am I not your Lord?' They said: 'Yes, we testify to it.' [This was] in case you say on the Day of Judgment: 'We were unaware of this. Or you say: It was our ancestors who worshipped others besides God and we are only their descendants. Will you then destroy us for what those liars did?'" (Qur'an, 7:172-3).

The Prophet (SAW) explained that when Allah created Adam, He took from him a covenant at a place called Na'maan on the 9th day' of the 12th month. He then extracted from Adam all of his descendants which would be born until the end of the world, generation after generation, and spread them out before Him to take a covenant from them also. He spoke to them, face to face, making them bear witness that He was their Lord. Consequently every human being is responsible for belief in God, which is imprinted on each and every soul. It is based on this inborn belief that Allah defined the purpose of humankind's creation in Chapter Ath-Thaariyaat:

> We did not create the jinn and the humankind except that they should worship Me." Qur'an 5l :56.

Thus, the essential purpose for which humankind was created is the worship of God. However, the Almighty is not in need of human worship. He did not create human beings out of a need on His part. If not a single human worshiped God, it would not diminish His glory in any way and if all of mankind worshiped Him, it would not increase His glory in any way. God is perfect. He alone exists without any needs. All created beings have needs. Consequently, it is humankind that needs to worship God.

The question concerning the purpose of mankind's creation may be expanded to include the world in which they live. The question would then be, "Why did God create human beings in this world?" Again, the answer to this question can easily be found in the final revelation, Chapters al Mulk and al Kahf:

> "It is He who created death and life to test which of you is best in conduct; and He is the Mighty, the Forgiving." Qur'an 67:2
>
> "Surely I have created all that is on earth as its ornaments that I may test which of them is best in conduct." Qur'an 18:7

Thus, the purpose for the creation of human beings in this world is to test their conduct. This world of life and death, wealth and poverty, sickness and health, was created to sift out the righteous souls from the evil souls. Human conduct in this world is the measure of faith. It should be noted, however, that the tests of conduct are not to inform God about humankind, for He knew everything there was to know about them before creating them. The tests serve to confirm on the Day of Judgment that those going to hell deserve it and those going to paradise only got there by God's grace. With regard to human beings in this life, the test of conduct serves two basic purposes: one, human spiritual growth, and the other, punishment or reward.

Spiritual Growth

The tests of this world are primarily for the spiritual growth of human beings. Just as an intense fire separates pure gold from the rough ore to which it is bound in nature, tests purify of the moral character of the believers. They force the believers to choose their higher spiritual qualities over their lower desires. Although not every test is passed, even in failure the believer grows by learning spiritual lessons to help him or her in future tests.

Generosity and Contentment:

For example, in all human societies the qualities of generosity and contentment are considered among the most noble characteristics. However, neither of these traits can develop if everyone has the same amount of wealth. Generosity can only be acquired when the human soul is aware that sharing with the needy is good-struggles against its desire to hoard its possessions. On the other hand, contentment is produced when the soul defeats the evils of envy and greed. The Creator wisely sets the stage for these spiritual struggles by unequally distributing wealth in this world. ln Chapter an-Nahl of the final revelation, Allah says:

> “Allah has favored some of you over others in sustenance.” Qur'an l6:71

Greed and stinginess are corrupt forms of the natural human desire to possess. The believers are informed by revelation that wealth is a trust given to humankind by God. Possessions exist in the world before humans are born and remain there after they die. If wealth is used according to divine instructions, it benefits those who have it in both worlds. But if it is used selfishly, it becomes a curse in this life and a cause for punishment in the next. In Chapter al Anfaal of the final revelation, Allah SWT warns the believers to beware of the dangers of wealth and children:

> “Know that your wealth end children are I test." Qur'an 8:28

God further warns the believers in Chapter al Munaafiqoon not to let their desire for wealth and children divert them from obedience to Him, for this is the test of possessions.

> "O believers! Do not allow your wealth and children to divert you from the remembrance of Allah." Qur'an 63:9

> “He raised some of you over others in rank to test you with what He granted you." Qur'an 6:165

The desire to accumulate wealth cannot be satisfied in this life. The more human beings have, the more they want. The Prophet (SAW) stated," If a man had a valley of gold, he would desire another, for nothing will fill his mouth but the dirt [of his grave]. And Allah forgives whoever sincerely repents. The negative

desire can only be overcome by giving of one's wealth charitably. Thus, Allah commanded the prophets to collect charity from the more wealthy among their followers for distribution among the poor.

The Last Sermon of Prophet Muhammad (SAW)

After praising, and thanking Allah he said (Arab-News 2020):

“O People, lend me an attentive ear, for I know not whether after this year, I shall ever be amongst you again. Therefore, listen to what I am saying to you very carefully and take these words to those who could not be present here today.

O people, just as you regard this month, this day, this city as Sacred, so regard the life and property of every Muslim as a sacred trust. Return the goods entrusted to you to their rightful owners. Hurt no one so that no one may hurt you. Remember that you will indeed meet your Lord, and that He will indeed reckon your deeds. Allah has forbidden you to take usury (interest), therefore all interest obligation shall henceforth be waived. Your capital, however, is yours to keep. You will neither inflict nor suffer any inequity. Allah has Judged that there shall be no interest and that all the interest due to Abbas ibn Abd Al-Muttalib (Prophet’s uncle) shall henceforth be waived.

Beware of Satan, for the safety of your religion. He has lost all hope that he will ever be able to lead you astray in big things, so beware of following him in small things.

O people, it is true that you have certain rights with regard to your women, but they also have rights over you. Remember that you have taken them as your wives only under Allah’s trust and with His permission. If they abide by your right then to them belongs the right to be fed and clothed in kindness. Do treat your women well and be kind to them for they are your partners and committed helpers. And it is your right that they do not make friends with any one of whom you do not approve, as well as never to be unchaste.

O people, listen to me in earnest, worship Allah, say your five daily prayers (Salah), fast during the month of Ramadan, and give your wealth in Zakat. Perform Hajj if you can afford to.

All mankind is from Adam and Eve; an Arab has no superiority over a non-Arab nor a non-Arab has any superiority over an Arab; also a white has no superiority over black nor a black has any superiority over white except by piety (taqwa) and good action. Learn that every Muslim is a brother to every Muslim and that the Muslims constitute one brotherhood. Nothing shall be legitimate to a Muslim which belongs to a fellow Muslim unless it was given freely and willingly. Do not, therefore, do injustice to yourselves.

Remember, one day you will appear before Allah and answer your deeds. So beware, do not stray from the path of righteousness after I am gone.

O people, no prophet or apostle will come after me and no new faith will be born.

Reason well, therefore, O people, and understand words which I convey to you. I leave behind me two things, the Qu'ran and my example, the Sunnah and if you follow these you will never go astray. All those who listen to me shall pass on my words to others and those to others again; and may the last ones understand my words better than those who listen to me directly. Be my witness, O Allah, that I have conveyed your message to your people”.

(Reference: Al-Bukhari 1623, 1626, 6361; Muslim 98; Tirmidhi 1628, 2046, 2085)

Opinion of Abul A'la Maududi

Renowned Muslim Philosopher Maulana Abul A'la Maududi (1903-79) in his book Tajdeed o Ahya i Deen - (Restoration and Resurgence of Deen), categorized the theories about the purpose of life (mankind in relation to the Universe) into four groups: i) the Pure Ignorance, believing that this Universe has come into being accidentally, with no prior intention or purpose, is running and will terminate without purpose, with no need for existence or God; ii) Polytheist Ignorance, believing in the Universe to have many masters, refusing Oneness of God, having to scientific proof and declaring anything as their god, without any consensus between the followers; iii) Monastic ignorance, believing that this World and body of the mankind is a curse for man, the human soul is a prisoner in the body, hence they abandon this worldly matters and its pleasures; iv) Islamic Theory of the Purpose of Life, believing that all prophets of Allah SWT, the Almighty God preached that this Universe, including mankind, have been created by Allah SWT, as a Sole Emperor, Owner, Sustainer, controlling all the events, monitoring mankind for their good or bad deeds in light of the guidance revealed through Wahy on the ≅ 124,000 (more or less) Prophets.

For monitoring mankind, the Creator has adopted a strange system. He hided Himself and the system of Angles; governing the Universe secretly. The man finds himself in the Universe and through external senses, he doesn't consider himself slave and even answerable to anyone about his good or bad deeds. Prophets have come in the past and guided mankind towards the straight path of Allah SWT. Prophets did not possess visible material powers to force the people towards the divine revelations. If he wants to disobey the diving guidance, he is not prevented by force, until he reaches some limit before he is punished in this World or the Hereafter. He is set free to opt for good or bad deeds according to his wisdom.

For preaching such system, Almighty God has nominated approximately 124,000 prophets. For implementation of the system in the Society, there is a need to influence the government. Such a government would run the whole business. So the mission of the prophets may only be completed if such a way of life is implemented in a particular country/region.

Opinion of Mehdi Golshani

Some Muslim philosophers separated the findings of modern science from its philosophical attachments (Mehdi 2013) Thus, while they praised the attempts of Western scientists for the discovery of the secrets of nature, they warned against various empiricist and materialistic interpretations of scientific findings. Scientific knowledge can reveal certain aspects of the physical world, but it should not be identified with the alpha and omega of knowledge. Rather, it has to be integrated into a metaphysical framework--consistent with the Muslim worldview--in which higher levels of knowledge are recognized and the role of science in bringing us closer to God is fulfilled.

For medieval scientists, every created thing had its especial place in the hierarchy of the created world, because it was created by a God who had a designed telos for the universe. The founders of modern science, however, ignored the notion of telos for the universe. Believing scientists did not deny the relevance of purpose to the created universe, but they believed that teleological considerations should not play a role in scientific descriptions.

Weinberg's well-known statement is typical of their view: i) The present universe had evolved from an unspeakably unfamiliar early condition, and faces a future extinction of endless cold or intolerable heat; ii) The more the universe seems comprehensible, the more it also seems pointless. Currently, it is fashionable to eliminate the notion of goal to the universe. Thus, even many of the believing scientists ignore teleological considerations in their scientific work.

In the Qur'anic view, God is the Creator and the Sustainer of the universe. He has created everything in measure and has decreed for it a telos. The creation is in truth, not for sport or vanity, and everything has a definite term (Q. 21:16; 38:27; 44:38; 46:3). The Qur'an has made a distinction between the Creator, the design and the internal order of the created things on the one hand and their guidance on the other hand. The direction that everything follows is not the result of its internal order. Rather, it is something beyond its orderly structure. The Qur'an mentions a universal notion of purpose and direction for the created universe (Q. 20:50; 87: 2-3).

According to the Qur'an, we originate from God and we shall return to God, and everything is created to worship God in its proper way (Q. 51: 56; 62:1). If we assume a purpose for the creation, then the evolution of created things is not without telos. In the Qur'anic outlook, the end of this motion is in the Hereafter, where everything meets its proper destination and the pious feel the presence of God. If there were no Hereafter, the creation would be in vain: Did you think that We created you only for sport and that you would not be returned to Us? (Q. 23: 115)

One might argue that Hereafter is meaningful only for humans and possibly animals and that the universality of the sense of direction is disputable. In response, one could say that it is naive to deny non-humans a telos only on the basis of our present knowledge of the physical world. Furthermore, even if one assumes that anthropic coincidences in modern cosmology are indications of the special status of humanity and that the rest of the universe serves as a ground for the development of human beings, one can still infer the presence of purpose in the whole universe.

As Paul Davies puts it: The success of human science and mathematics and the anthropic fine-tuning that is apparently a prerequisite for the very existence of human like beings strongly suggests that our existence is linked into the laws of the universe at the most basic level. Far from being a trivial and incidental byproduct of random and meaningless physical processes, it seems that conscious organisms are a fundamental feature of the cosmos.... Clearly, the universe could have been otherwise. The fact that it is, as it is, and that its form is linked so intimately with our own existence, is powerful evidence that the universe exists for a purpose, and that in our small yet significant way, we are part of that purpose.

The Holy Qur'an is very explicit in attributing telos to the created universe and so Muslim theologians have never ignored teleological considerations, yet the silence of modern science about this point has not affected their view, although it has had a silencing effect on Muslim scientists.

The negligence of teleological considerations by the scientists of the last few centuries is partly due to their heavy involvement with mathematical manipulations and the predictive aspects of science and partly due to the false assumption that questions of teleological nature hinder the development of science. We don't believe that there is any inconsistency between holding a belief in a purposeful world and being a creative scientist.

If we don't see telos for the created universe in the findings of modern science, it is because the philosophical framework in which contemporary scientists express their scientific work does not accommodate questions of teleological nature.

Walter R. Hearn maintains that: the self-limitation of science to examining only secondary or mechanical causes should signal immediately that science has no capacity to deal with the existence--or non-existence--of a purpose behind the universe ... In my opinion, to say anything at all about ultimate purpose requires stepping outside the normal boundaries of science, even though individuals who deny divine purpose may claim that their argument rests on "what science tells us". The irrelevance of certain questions within science does tell us something, however, about the limited relevance of science to some of the deepest human concerns.

Opinion of Dr Abu Ameena Bilal Philips

Without knowledge of the purpose of creation, human beings wander aimlessly through life, like ships at sea without rudders. Their goals are either wrong due to incorrect religious teachings, or materialistic and thus confined to this world. It is, therefore, essential for their own well-being that they know why God created them. Fundamentally; Allah created in order to manifest His attributes. Consequently, creation is the consequence of His being the creator; paradise manifests His Mercy and Grace; hell His Justice; humankind's errors His Forgiveness; living and non-living beings His Generosity; etc.

The significance of knowing that creation is a means by which Allah manifests His attributes is that human beings can then correctly recognize God and accept His decree and their destiny. However, it is of even greater importance that human beings know the purpose for which they were created. The final Revelation teaches that it is to worship God because humankind must worship Him in order to attain righteousness and the spiritual status necessary to enter paradise.

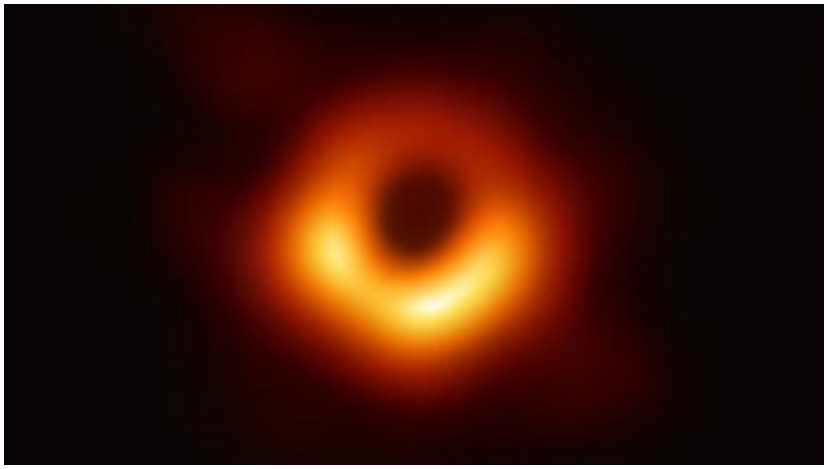
The significance of this knowledge is that human beings understand that worship is as much a necessity as eating and breathing and that it is not a favor they are doing for God. It is also essential that human beings grasp the importance of this world's bounties and trials. Without knowledge of the purpose behind their creation, humans tend to look at this world as being hostile to them. However, God created it primarily for their benefit.

The tests of good and evil are designed to bring out the higher spiritual qualities of the human being. However, humans are not able to benefit from the tests unless they put complete trust in God and have patience in what He has destined for them. For those who reject God, the trials of this world becomes a punishment for them in this life prior to the eternal punishment in the next world.

Knowledge of the purpose of the world also makes the believer environmentally conscious. Humankind is responsible to utilize the bounties of this life justly. The creatures of the earth and seas, the vegetation and the atmosphere have been put in his care. Consequently, humans should take great care to preserve the environment and the living creatures within it as a means of giving thanks to God.

With such a comprehensive consciousness of purpose, human beings become whole. They are transformed into guides for humankind, showing the way to righteousness. Consequently, Allah describes them as the best of mankind in the final revelation: "You are the best people chosen for mankind because you command righteousness' forbid evil and believe in Allah." Qur'an 3: 110”

Opinion of Prof Qureshi



Prof Qureshi believes that this Universe has not come into existence accidentally and without purpose, as rubbish! But this Universe with the given order, came into being through the intention and commandment of Almighty God, as a Grand Design of the Creator, the Sustainer, the Omniscient (all-knowing), the Omnipotent (all-powerful), the Omnipresent (all-present) and as having an eternal and necessary existence; known as the Supreme God by the people around the Globe, as Lord Vishnu by the Hindus, Elohim by the Jews and as Allah SWT by Muslims; sending the last message to the people in the form of the last Book, Al Qur'an, through His last messenger, Prophet Muhammad (SAW), the Rahmatullilalameen, the blessing for the Worlds.

The Law of Entropy, considered as one of the most fundamental laws of the universe, states that the disorder in the universe is constantly increasing in a single direction. In the presence of this law, we cannot imagine the creation of the Universe having an extreme level of order regarding astronomical, physical and biological systems. The Law of Entropy can only lead things and matter towards garbage! This law doesn't provide space without the presence of God, for creation of atoms, Earth, Solar System, galaxies, microorganisms, plants, animals and human beings on Earth, interacting in total harmony among themselves and within a set of physical laws and the laws of quantum mechanics.

Only a Grand Design can create an environment for creation and sustenance of these systems. The apparent atheists have to surrender against this fact. In his famous book "The Grand Design", Stephen Hawking stated that the discovery, relatively recently, of the extreme fine-tuning of so many of the laws of nature could lead at least some of us back to the old idea that this grand design is the work of some grand designer or intelligent designer, with the unstated but implied understanding that the designer is God. And Stephen Hawking, finally while dying, admitted the need of the Supernatural Creator to shape laws for a probabilistic process as a source of scientific support for a multiverse theory. Darwin, in his Origin of Species has referred to the complex structure of the Eye to be the result of a careful overseeing of the evolutionary process by God.

Allah SWT is the "Necessary Being" and the "Eternal Being". He created the Universe and is sustaining it through all time supervision and protection from disasters. He doesn't sleep and doesn't get tired. He is glorified by the Angels and all living and nonliving things, unintentionally, except human beings and jinns, who have been given the choice to glorify Him or not. Glorification of all the creatures may be considered as their obedience to the laws of nature and their intrinsic characteristic and capacities for such duties. Prophet Moses asked God that if the Earth and Skies stop obeying Your orders, what will You do? Allah SWT replied that We will let some of my creatures eat them. And those creatures are in my pastures (Fatwa No. 487-755/L=10/1442, Deoband 2020). In fact, those creatures are probably the

black holes eating stars and other heavenly bodies, visualized only recently during the year 2019. Hawking's finding confirmed the Quranic Statement – "Everything in it will perish to nonexistence [55:26]."- only will remain the Countenance of your Lord, full of Majesty and Splendour [55:27]! (Miah 2019).

Allah SWT has made human beings as His Khalifa (representative) on Earth. Adam (AS) was sent to Earth as the first human being, comprising a Bashar (body) and a soul (the commandment of Allah SWT). The body was available on Earth as the highest form of life belonging to the genus Homo, believed to have existed for at least two million years and modern humans first appeared in the Upper Paleolithic. As per revelation of the Qur`an Adam (AS) was one chosen Bashar and he became Adam (AS) after Allah blew into him out of His spirit. Adam AS was given knowledge at the very beginning in the form of "Knowledge of the Names" symbolizing a latent potentiality or capacity in the human entity. After having passed through numerous stages of manifestation and exfoliation, the "knowledge of the Names" now stands at the threshold of gaining mastery over the very forces of nature that once threatened the existence of this fragile creature. Today human knowledge has reached a point where it has become capable of going beyond merely investigating matters related to the organization of the Created Order and Intelligent Design; it has now begun to investigate issues related to the event of creation itself.

Allah SWT created human beings and jinns to glorify and worship Him as their Creator and Sustainer; to test whether they perform good or bad deeds and to reward or punish in the Hereafter, accordingly. Many Prophets AS (124,000 in number, approximately) were sent to guide the people for their duties to Allah SWT and the creatures. Adam (AS) was the first prophet; followed by Noah (AS), whose people were destroyed through the Great Flood due to disobedience. Prophet Ibrahim (AS) was the ancestor of many prophets related to monotheistic Abrahamic Religions (Judaism, Christianity and Islam). Islam is the latest religion revealed by Allah SWT through the last Prophet Muhammad (SAW) during a period of 23 years (611-634 AD) in the form of the Holy Qur'an, the last Book from Allah SWT and teachings (Hadith) and normative examples (Sunnah) of Prophet Muhammad (SAW).

Islam teaches on the rights of the Creator (Haqooq allah) and the creatures (Huqooq Ul Ibaad). Man has been given a chance to ask forgiveness for his deficiencies and sins from Allah SWT anytime, anywhere. Muhammad (SAW) has been sent as Rahmatullilalameen (a blessing for the Worlds), and his followers are supposed to complete his mission till the Day of Judgement. On the Day of Judgement, one has to get his recommendations before entering Jannah (the paradise). It would be wise to present him with a gift before asking for his recommendations. I am preparing the gift in the form of this manuscript, etc.

I consider myself duty-bound to obey the instructions contained in the last sermon of Prophet Muhammad (SAW) comprising: i) Return the goods entrusted to you to their rightful owners; ii) Hurt no one so that no one may hurt you; iii) Waive all interest obligation; iv) Beware of Satan, for the safety of your religion; v) Do treat your women well and be kind to them for they are your partners and committed helpers; vi) Worship Allah, say your five daily prayers, fast during the month of Ramadan, and give your wealth in Zakat. Perform Hajj if you can afford to; vii) All mankind is from Adam and Eve, an Arab has no superiority over a non-Arab nor a non-Arab has any superiority over an Arab; also a white has no superiority over black nor a black has any superiority over white except by piety (taqwa) and good action; viii) Every Muslim is a brother to every Muslim; ix) Do not stray from the path of righteousness after I am gone; x) No prophet or apostle will come after me and no new faith will be born; xi) I am leaving behind two things, the Qur'an and my Sunnah and if you follow these you will never go astray;

xii) All those who listen to me shall pass on my words to others and those to others again; xiii) Be my witness, O Allah, that I have conveyed your message to your people".

4. A brief History of Humankind - Sapiens

An animal of no significance

Homo sapiens, too, belongs to a family as mentioned by Harari (2014) under historical perspective. This banal fact used to be one of history's most closely guarded secrets. Homo sapiens long preferred to view itself as set apart from animals, an orphan bereft of family, lacking siblings or cousins, and most importantly, without parents. But that's just not the case. Like it or not, we are members of a large and particularly noisy family called the great apes. Our closest living relatives include chimpanzees, gorillas and orang-utans. The chimpanzees are the closest. Just 6 million years ago, a single female ape had two daughters. One became the ancestor of all chimpanzees, the other is our own grandmother.

The tree of knowledge

Although Sapiens had already populated East Africa 150,000 years ago, they began to overrun the rest of planet Earth and drive the other human species to extinction only about 70,000 years ago (). In the intervening millennia, even though these archaic Sapiens looked just like us and their brains were as big as ours, they did not enjoy any marked advantage over other human species, did not produce particularly sophisticated tools, and did not accomplish any other special feats.

The appearance of new ways of thinking and communicating, between 70,000 and 30,000 years ago, constitutes the Cognitive Revolution. What caused it? We're not sure. The most commonly believed theory argues that accidental genetic mutations changed the inner wiring of the brains of Sapiens, enabling them to think in unprecedented ways and to communicate using an altogether new type of language. We might call it the Tree of Knowledge mutation. Why did it occur in Sapiens DNA rather than in that of Neanderthals? It was a matter of pure chance, as far as we can tell. But it's more important to understand the consequences of the Tree of Knowledge mutation than its causes. What was so special about the new Sapiens language that it enabled us to conquer the world (Dunbar 1998).

A Day in the Life of Adam and Eve

In order to resolve this controversy and understand our sexuality, society and politics, we need to learn something about the living conditions of our ancestors, to examine how Sapiens lived between the Cognitive Revolution of 70,000 years ago, and the start of the Agricultural Revolution about 12,000 years ago (Christopher and Jethá 2010,). Unfortunately, there are few certainties regarding the lives of our forager ancestors. The debate between the 'ancient commune' and 'eternal monogamy schools is based on flimsy evidence. The vast majority of people lived in small bands numbering several dozen or at most several hundred individuals, and that all these individuals were humans. It is important to note this last point, because it is far from obvious. Most members of agricultural and industrial societies are domesticated animals. They are not equal to their masters, of course, but they are members all the same.

The origin of affluent society

Sapiens did not forage only for food and materials. They foraged for knowledge as well. To survive, they needed a detailed mental map of their territory. To maximize the efficiency of their daily search for food, they required information about the growth patterns of each plant and the habits of each animal. They needed to know which foods were nourishing, which made you sick, and how to use others as cures.

They needed to know the progress of the seasons and what warning signs preceded a thunderstorm or a dry spell.

They studied every stream, every walnut tree, every bear cave, and every flint-stone deposit in their vicinity. Each individual had to understand how to make a stone knife, how to mend a torn cloak, how to lay a rabbit trap, and how to face avalanches, snake bites or hungry lions. Mastery of each of these many skills required years of apprenticeship and practice. The average ancient forager could turn a flint stone into a spear point within minutes. When we try to imitate this feat, we usually fail miserably. Most of us lack expert knowledge of the properties of flint and basalt and the fine motor skills needed to work them precisely.

There is some evidence that the size of the average Sapiens brain has actually decreased since the age of foraging. Survival in that era required superb mental abilities from everyone. When agriculture and industry came along people could increasingly rely on the skills of others for survival, and new 'niches for imbeciles' were opened up.

Thirty thousand years ago, a Chinese forager might leave camp with her companions at, say, eight in the morning. They'd roam the nearby forests and meadows, gathering mushrooms, digging up edible roots, catching frogs and occasionally running away from tigers. By early afternoon, they were back at the camp to make lunch. That left them plenty of time to gossip, tell stories, play with the children and just hang out. Of course, the tigers sometimes caught them, or a snake bit them, but on the other hand they didn't have to deal with automobile accidents and industrial pollution.

Talking ghosts

In Sungir, Russia, archaeologists discovered in 1955 a 30,000-year-old burial site belonging to a mammoth-hunting culture. In one grave they found the skeleton of a fifty-year-old man, covered with strings of mammoth ivory beads, containing about 3,000 beads in total. On the dead man's head was a hat decorated with fox teeth, and on his wrists twenty ivory bracelets. Other graves from the same site contained far fewer goods. Scholars deduced that the Sungir mammoth-hunters lived in a hierarchical society, and that the dead man was perhaps the leader of a band or of an entire tribe comprising several bands. It is unlikely that a few dozen members of a single band could have produced so many grave goods by themselves.

The Flood

Following the Cognitive Revolution, Sapiens acquired the technology, the organizational skills, and perhaps even the vision necessary to break out of AfroAsia and settle the Outer World (O'Connel and Allen 2007). Their first achievement was the colonization of Australia some 45,000 years ago. Experts are hard-pressed to explain this feat. In order to reach Australia, humans had to cross a number of sea channels, some more than a hundred kilometers wide, and upon arrival they had to adapt nearly overnight to a completely new ecosystem.

The End of Sloth

The extinction of the Australian megafauna was probably the first significant mark Homo sapiens left on our planet. It was followed by an even larger ecological disaster, this time in America. Homo sapiens was the first and only human species to reach the western hemisphere landmass, arriving about 16,000 years

ago, that is in or around 14,000 BC. The first Americans arrived on foot, which they could do because, at the time, sea levels were low enough that a land bridge connected north-eastern Siberia with north-western Alaska.

History's Biggest Fraud

For 2.5 million years, humans fed themselves by gathering plants and hunting animals that lived and bred without their intervention. Homo erectus, Homo ergaster and the Neanderthals plucked wild figs and hunted wild sheep without deciding where fig trees would take root, in which meadow a herd of sheep should graze, or which billy goat would inseminate which nanny goat (Bellwood 2005). Homo sapiens spread from East Africa to the Middle East, to Europe and Asia, and finally to Australia and America – but everywhere they went, Sapiens too continued to live by gathering wild plants and hunting wild animals. Why do anything else when your lifestyle feeds you amply and supports a rich world of social structures, religious beliefs and political dynamics?

All this changed about 10,000 years ago, when Sapiens began to devote almost all their time and efforts to manipulating the lives of a few animal and plant species. From sunrise to sunset humans sowed seeds, watered plants, plucked weeds from the ground and led sheep to prime pastures. This work, they thought, would provide them with more fruit, grain and meat. It was a revolution in the way humans lived – the Agricultural Revolution.

Foragers knew the secrets of nature long before the Agricultural Revolution, since their survival depended on an intimate knowledge of the animals they hunted and the plants they gathered. Rather than heralding a new era of easy living, the Agricultural Revolution left farmers with lives generally more difficult and less satisfying than those of foragers. Hunter-gatherers spent their time in more stimulating and varied ways, and were less in danger of starvation and disease. The Agricultural Revolution certainly enlarged the sum total of food at the disposal of humankind, but the extra food did not translate into a better diet or more leisure. Rather, it translated into population explosions and pampered elites.

The body of Homo sapiens was adapted to climbing apple trees and running after gazelles, not to clearing rocks and carrying water buckets. Human spines, knees, necks and arches paid the price. Studies of ancient skeletons indicate that the transition to agriculture brought about a plethora of ailments, such as slipped discs, arthritis and hernias. Moreover, the new agricultural tasks demanded so much time that people were forced to settle permanently next to their wheat fields. This completely changed their way of life. We did not domesticate wheat. It domesticated us. The word 'domesticate' comes from the Latin domus, which means 'house'. Who's the one living in a house? Not the wheat. It's the Sapiens.

Justice in History

Understanding human history in the millennia following the Agricultural Revolution boils down to a single question: how did humans organize themselves in mass-cooperation networks, when they lacked the biological instincts necessary to sustain such networks? The short answer is that humans created imagined orders and devised scripts (Pollok 2005). These two inventions filled the gaps left by our biological inheritance.

However, the appearance of these networks was, for many, a dubious blessing. The imagined orders sustaining these networks were neither neutral nor fair. They divided people into make-believe groups, arranged in a hierarchy. The upper levels enjoyed privileges and power, while the lower ones suffered

from discrimination and oppression. Hammurabi's Code, for example, established a pecking order of superiors, commoners and slaves. Superiors got all the good things in life. Commoners got what was left. Slaves got a beating if they complained.

The Scent of Money

In 1519 Hernán Cortés and his conquistadors invaded Mexico, hitherto an isolated human world. The Aztecs, as the people who lived there called themselves, quickly noticed that the aliens showed an extraordinary interest in a certain yellow metal (Gómara 1943). In fact, they never seemed to stop talking about it. The natives were not unfamiliar with gold – it was pretty and easy to work, so they used it to make jewelry and statues, and they occasionally used gold dust as a medium of exchange. But when an Aztec wanted to buy something, he generally paid in cocoa beans or bolts of cloth.

Muslims and Christians killed each other, devastated fields and orchards, and turned prosperous cities into smoldering ruins – all for the greater glory of Christ or Allah. As the Christians gradually gained the upper hand, they marked their victories not only by destroying mosques and building churches, but also by issuing new gold and silver coins bearing the sign of the cross and thanking God for His help in combating the infidels.

Yet alongside the new currency, the victors minted another type of coin, called the millares, which carried a somewhat different message. These square coins made by the Christian conquerors were emblazoned with owing Arabic script that declared: 'There is no god except Allah, and Muhammad is Allah's messenger.' Even the Catholic bishops of Melgueil and Agde issued these faithful copies of popular Muslim coins, and God-fearing Christians happily used them. Tolerance flourished on the other side of the hill too. Muslim merchants in North Africa conducted business using Christian coins such as the Florentine orin, the Venetian ducat and the Neapolitan gigliato. Even Muslim rulers who called for jihad against the infidel Christians were glad to receive taxes in coins that invoked Christ and His Virgin Mother.

The Vicious Circle

Gómara, Francisco López de 1943.Historia de la Conquista de Mexico, vol. 1, ed. D. Joaquin Ramirez. Cabanes. Mexico City: Editorial Pedro Robredo, 106.

Megged, Nahum 1999. The Aztecs. Tel Aviv: Dvir. Hebrew, 103.

Frend, WHC 2008. Martyrdom and Persecution in the Early Church. Cambridge: James Clarke & Co, 536–7.

All societies are based on imagined hierarchies, but not necessarily on the same hierarchies. What accounts for the dierences? Why did traditional Indian society classify people according to caste, Ottoman society according to religion, and American society according to race? In most cases the hierarchy originated as the result of a set of accidental historical circumstances and was then perpetuated and refined over many generations as different groups developed vested interests in it. For instance, many scholars surmise that the Hindu caste system took shape when Indo-Aryan people invaded the Indian subcontinent about 3,000 years ago, subjugating the local population and establishing a stratied society, in which they, of course, occupied the leading positions (priests and warriors), leaving

the natives to live as servants and slaves. The invaders, who were few in number, feared losing their privileged status and unique identity.

A similar vicious circle perpetuated the racial hierarchy in modern America. From the sixteenth to the eighteenth century, the European conquerors imported millions of African slaves to work the mines and plantations of America. They chose to import slaves from Africa rather than from Europe or East Asia due to three circumstantial factors. Trapped in this vicious circle, blacks were not hired for white-collar jobs because they were deemed unintelligent, and the proof of their inferiority was the paucity of blacks in white-collar jobs.

He and She

Different societies adopt different kinds of imagined hierarchies. Race is very important to modern Americans but was relatively insignificant to medieval Muslims. Caste was a matter of life and death in medieval India, whereas in modern Europe it is practically non-existent. One hierarchy, however, has been of supreme importance in all known human societies: the hierarchy of gender. Is the division into men and women a product of the imagination, like the caste system in India and the racial system in America, or is it a natural division with deep biological roots? And if it is indeed a natural division, are there also biological explanations for the preference given to men over women? Some of the cultural, legal and political disparities between men and women reflect the obvious biological differences between the sexes. In democratic Athens of the fifth century BC, an individual possessing a womb had no independent legal status and was forbidden to participate in popular assemblies or to be a judge.

Biologically, humans are divided into males and females, Homo sapiens having one XY or XX chromosomes. But 'man' and woman' name social, not biological, categories. The social terms carry a lot of baggage that has only a tenuous, if any, relationship to the biological terms. A man is not a Sapiens with particular biological qualities; rather, he fits into a particular slot in his society's imagined human order; assigned the roles like engaging in politics, rights like voting and duties like military service. Likewise, a woman is not a Sapiens with two X chromosomes, a womb and plenty of estrogen, rather, she is a female member with unique feminine roles like raising children, rights like protection against violence and duties like obedience to her husband. The author had concluded that women in ancient and modern Athens have been the same thing biologically during the last 2500 years, but became very different culturally.

Imperial Visions

The ancient Romans were used to being defeated. Like the rulers of most of history's great empires, they could lose battle after battle but still win the war (Megged 1999). An empire that cannot sustain a blow and remain standing is not really an empire. An empire need not emerge from military conquest. The Athenian Empire began its life as a voluntary league, and the Habsburg Empire was born in wedlock, cobbled together by a string of shrewd marriage alliances. Nor must an empire be ruled by an autocratic emperor. The British Empire, the largest empire in history, was ruled by a democracy. Other democratic empires have included the modern Dutch, French, Belgian and American empires, as well as the pre-modern empires of Novgorod, Rome, Carthage and Athens. The Athenian Empire at its zenith was much smaller in size and population than today's Greece.

The Law of Religion

Parallel to the Empires, around the holy Ka'aba in Mecca, human unification was proceeding by other means (Frend 2008). Had you been a pilgrim to Mecca, circling Islam's holiest shrine in the year 1300, you might have found yourself in the company of a party from Mesopotamia, their robes floating in the wind, their eyes blazing with ecstasy, and their mouths repeating one after the other the ninety-nine names of God. Just ahead you might have seen a weather-beaten Turkish patriarch; a group of Muslims from the African kingdom of Mali the presence of brothers from India, or perhaps from the mysterious spice islands further east.

Today religion is often considered a source of discrimination, yet, in fact, religion has been the third great unifier of humankind, alongside money and empires. Since all social orders and hierarchies are imagined, they are all fragile. Religions assert that our laws are not the result of human caprice, but are ordained by an absolute and supreme authority. This helps place at least some fundamental laws beyond challenge, thereby ensuring social stability. Religion can thus be defined as a system of human norms and values that is founded on a belief in a superhuman order. Religious must espouse a universal superhuman order that is true always and everywhere. Secondly, it must insist on spreading this belief to everyone. In other words, it must be universal and missionary. Islam and Buddhism meet these two criteria.

Polytheism

Polytheism does not necessarily dispute the existence of a single power or law governing the entire universe (). In fact, most polytheist and even animist religions recognized such a supreme power that stands behind all the different gods, demons and holy rocks. In classical Greek polytheism, Zeus, Hera, Apollo and their colleagues were subject to an omnipotent and all-encompassing power – Fate (Moira, Ananke). In Hindu polytheism, a single principle, Atman, controls the myriad gods and spirits, humankind, and the biological and physical world. The fundamental insight of polytheism, which distinguishes it from monotheism, is that the supreme power governing the world is devoid of interests and biases, and therefore it is unconcerned with the mundane desires, cares and worries of humans.

God is One

Polytheism continued to give birth here and there to other monotheistic religions, but they remained marginal, not least because they failed to digest their own universal message. Judaism, for example, argued that the supreme power of the universe has interests and biases, yet His chief interest is in the tiny Jewish nation and in the obscure land of Israel. The big breakthrough came with Christianity. This faith began as an esoteric Jewish sect that sought to convince Jews that Jesus of Nazareth was their long-awaited messiah. However, one of the sect's first leaders, Paul of Tarsus, reasoned that if the supreme power of the universe has interests and biases, and if He had bothered to incarnate Himself in the flesh and to die on the cross for the salvation of humankind, then this is something everyone should hear about, not just Jews.

It was thus necessary to spread the good word – the gospel – about Jesus throughout the world. Paul's arguments fell on fertile ground. Christians began organizing widespread missionary activities aimed at all humans. In one of history's strangest twists, this esoteric Jewish sect took over the mighty Roman Empire. Christian success served as a model for another monotheist religion that appeared in the

Arabian Peninsula in the seventh century, Islam. Like Christianity, Islam, too, began as a small sect in a remote corner of the world, but in an even stranger and swifter historical surprise it managed to break out of the deserts of Arabia and conquer an immense empire stretching from the Atlantic Ocean to India.

Henceforth, the monotheist idea played a central role in world history. Monotheists have tended to be far more fanatical and missionary than polytheists. A religion that recognizes the legitimacy of other faiths implies either that its god is not the supreme power of the universe, or that it received from God just part of the universal truth. Since monotheists have usually believed that they are in possession of the entire message of the one and only God, they have been compelled to discredit all other religions. Over the last two millennia, monotheists repeatedly tried to strengthen their hand by violently exterminating all competition.

The Secret of Success

Some scholars do indeed provide deterministic explanations of events such as the rise of Christianity. They attempt to reduce human history to the workings of biological, ecological or economic forces. Yet most historians tend to be skeptical of such deterministic theories (Susan 1999).

Blackmore, Susan 1999. The Meme Machine. Oxford: Oxford University Press.

The Capital Creed

Money has been essential both for building empires and for promoting science (Harari 2014). But is money the ultimate goal of these undertakings, or perhaps just a dangerous necessity? To understand modern economic history, you really need to understand just a single word, growth. For better or worse, in sickness and in health, the modern economy has been growing like a hormone-soused teenager. It eats up everything it can and puts on inches faster than you can count.

For most of history the economy stayed much the same size. Yes, global production increased, but this was due mostly to demographic expansion and the settlement of new lands. Per capita production remained static. But all that changed in the modern age. In 1500, global production of goods and services was equal to about $250 billion; today it hovers around $60 trillion. More importantly, in 1500, annual per capita production averaged $550, while today every man, woman and child produces, on the average, $8,800 a year. What accounts for this stupendous growth? Economics is a notoriously complicated subject. Banks are allowed to loan $10 for every dollar they actually possess, which means that 90 percent of all the money in our bank accounts is not covered by actual coins and notes.

It sounds like a giant Ponzi scheme, doesn't it? But if it's a fraud, then the entire modern economy is a fraud. The fact is, it's not a deception, but rather a tribute to the amazing abilities of the human imagination. What enables banks – and the entire economy – to survive and flourish is our trust in the future. This trust is the sole backing for most of the money in the world.

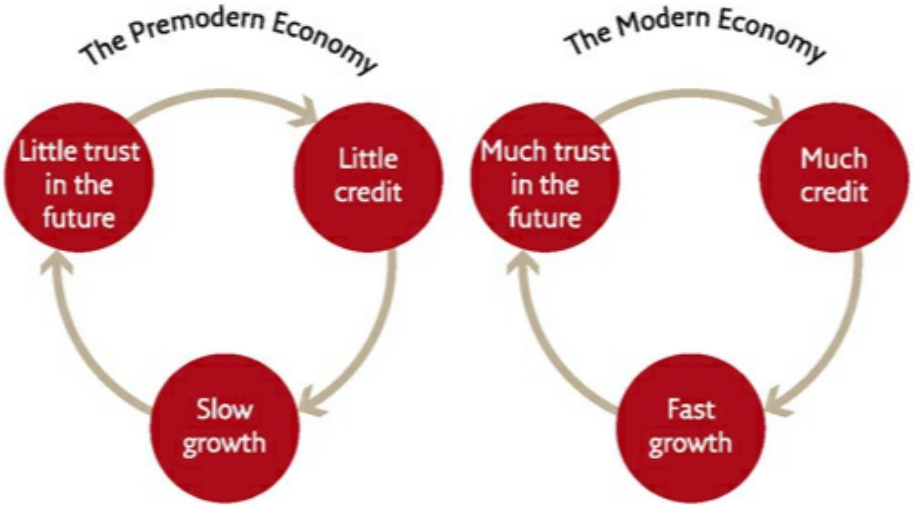
A Growing Pie

After the Scientific Revolution came the idea of progress, built on the notion that if we admit our ignorance and invest resources in research, things can improve. This idea was soon translated into economic terms (Carbone and Richards 2009). Whoever believes in progress believes that geographical discoveries, technological inventions and organizational developments can increase the sum total of human production, trade and wealth. New trade routes in the Atlantic could flourish without ruining old

routes in the Indian Ocean. New goods could be produced without reducing the production of old ones. For instance, one could open a new bakery specializing in chocolate cakes and croissants without causing bakeries specializing in bread to go bust. Everybody would simply develop new tastes and eat more. I can be wealthy without your becoming poor; I can be obese without your dying of hunger. The entire global pie can grow. The following illustration has reported the economic history of the World in a nutshell.

The belief in the growing global pie eventually turned revolutionary. In 1776 the Scottish economist Adam Smith published The Wealth of Nations, probably the most important economic manifesto of all time (Smith 1776). Smith taught people to think about the economy as a 'win-win situation', in which my profits are also your profits. The increase in your slice depends upon the increase in my slice. If I am rich, you too will be enriched since you can now sell me something. Smith denied the traditional contradiction between wealth and morality, and threw open the gates of heaven for the rich.

Free markets are the best economic system, not because Adam Smith said so, but because these are the immutable laws of nature. The Wealth of Nations opens with a famous passage describing a pin factory in which ten persons, by specialized tasks, turn out 48,000 pins a day, compared with the few pins perhaps only one that could have been produced alone.



The Economic History of the World in a Nutshell

And they lived happily ever after

The last 500 years have witnessed a breathtaking series of revolutions. The economy has grown exponentially, and humankind today enjoys the kind of wealth that used to be the stuff of fairy tales. Science and the Industrial Revolution have given humankind superhuman powers and practically limitless energy. The social order has been completely transformed, as have politics, daily life and human psychology (Haidt 2006). But are we happier? Historians seldom ask such questions; whether the citizens of Uruk and Babylon were happier than their foraging ancestors, whether the rise of Islam made

Egyptians more pleased with their lives, or how the collapse of the European empires in Africa have influenced the happiness of countless millions.

Evolution molded our minds and bodies to the life of hunter-gatherers. The transition first to agriculture and then to industry has condemned us to living unnatural lives that cannot give full expression to our inherent inclinations and instincts, and therefore cannot satisfy our deepest yearnings. Nothing in the comfortable lives of the urban middle class can approach the wild excitement and sheer joy experienced by a forager band on a successful mammoth hunt. Every new invention just puts another mile between us and the Garden of Eden. On the other side, over the last two centuries modern medicine has decreased child mortality from 33 per cent to less than 5 per cent. Can anyone doubt that this made a huge contribution to the happiness not only of those children who would otherwise have died, but also of their families and friends?

Majority of humans began to enjoy the fruits of modern medicine no earlier than 1850, and the drastic drop in child mortality is a twentieth-century phenomenon. Mass famines continued to blight much of humanity up to the middle of the twentieth century. During Communist Chinas Great Leap Forward of 1958–61, somewhere between 10 and 50 million human beings starved to death. International wars became rare only after 1945, largely thanks to the new threat of nuclear annihilation. Hence, though the last few decades have been an unprecedented golden age for humanity, it is too early to know whether this represents a fundamental shift in the currents of history or an ephemeral eddy of good fortune.

Counting Happiness

If people are richer and healthier, then they must also be happier. But philosophers, priests and poets have brooded over the nature of happiness for millennia, and many have concluded that social, ethical and spiritual factors have as great an impact on our happiness as material conditions. Perhaps people in modern affluent societies suffer greatly from alienation and meaninglessness despite their prosperity. And perhaps our less well-to-do ancestors found much contentment in community, religion and a bond with nature.

Family and community seem to have more impact on our happiness than money and health. People with strong families who live in tight-knit and supportive communities are significantly happier than people whose families are dysfunctional and who have never found a community to be part of. There is a very close correlation between good marriages and high subjective well being, and between bad marriages and misery. An impecunious invalid surrounded by a loving spouse, a devoted family and a warm community may well feel better than an alienated billionaire, provided that the invalid's poverty is not too severe and that his illness is not degenerative or painful.

The Third World discontent may be fomented not merely by poverty, disease, corruption and political oppression but also by mere exposure to First World standards. The average Egyptian was far less likely to die from starvation, plague or violence under Hosni Mubarak than under Ramses II or Cleopatra. Never had the material condition of most Egyptians been so good. You'd think they would have been dancing in the streets in 2011, thanking Allah for their good fortune. Instead they rose up furiously to overthrow Mubarak. They weren't comparing themselves to their ancestors under the pharaohs, but rather to their contemporaries in Obama's America.

Chemical Happiness

Biologists correlate happiness with biochemical and genetic factors. They hold that our mental and emotional world is governed by biochemical mechanisms shaped by millions of years of evolution. Like all other mental states, our subjective well-being is not determined by external parameters such as salary, social relations or political rights. Rather, it is determined by a complex system of nerves, neurons, synapses and various biochemical substances such as serotonin, dopamine and oxytocin. A person who just won the lottery or found new love and jumps from joy is not really reacting to the money or the lover. She is reacting to various hormones coursing through her bloodstream, and to the storm of electric signals flashing between different parts of her brain.

Know Thyself

If happiness is based on feeling pleasant sensations, then in order to be happier we need to re-engineer our biochemical system. If happiness is based on feeling that life is meaningful, then in order to be happier we need to delude ourselves more effectively. Is there a third alternative? Both the above views share the assumption that happiness is some sort of subjective feeling (of either pleasure or meaning), and that in order to judge people's happiness, all we need to do is ask them how they feel. To many of us, that seems logical because the dominant religion of our age is liberalism. Liberalism sanctifies the subjective feelings of individuals. It views these feelings as the supreme source of authority. What is good and what is bad, what is beautiful and what is ugly, what ought to be and what ought not to be, are all determined by what each one of us feels.

Most history books focus on the ideas of great thinkers, the bravery of warriors, the charity of saints and the creativity of artists. They have much to tell about the weaving and unravelling of social structures, about the rise and fall of empires, about the discovery and spread of technologies. Yet they say nothing about how all this influenced the happiness and suffering of individuals. This is the biggest lacuna in our understanding of history. We had better start filling it.

The end of Homo Sapiens

Harari (2014) began by presenting history as the next stage in the continuum of physics to chemistry to biology. Sapiens are subject to the same physical forces, chemical reactions and natural-selection processes that govern all living beings. Sapiens are incapable of breaking free of their biologically determined limits. But at the dawn of the twenty-first century, this is no longer true: Homo sapiens is transcending those limits (Loi et al 2011). It is now beginning to break the laws of natural selection, replacing them with the laws of intelligent design.

Biologists the world over are locked in battle with the intelligent-design movement, which opposes the teaching of Darwinian evolution in schools and claims that biological complexity proves there must be a creator who thought out all biological details in advance. The biologists are right about the past, but the proponents of intelligent design might, ironically, be right about the future.

Remarkable wonders can be performed with genetic engineering, which is why it raises a host of ethical, political and ideological issues. And it's not just pious monotheists who object that man should not usurp God's role. Many confirmed atheists are no less shocked by the idea that scientists are stepping into nature's shoes. Animal-rights activists decry the suffering caused to lab animals in genetic engineering experiments, and to the farmyard animals that are engineered in complete disregard of their needs and

desires. Human-rights activists are afraid that genetic engineering might be used to create supermen who will make serfs of the rest of us.

Professor George Church of Harvard University recently suggested that, with the completion of the Neanderthal Genome Project, we can now implant reconstructed Neanderthal DNA into a Sapiens ovum, thus producing the first Neanderthal child in 30,000 years. Church claimed that he could do the job for a paltry $30 million.

It's unclear whether bioengineering could really resurrect the Neanderthals, but it would very likely bring down the curtain on Homo sapiens. Tinkering with our genes won't necessarily kill us. But we might fiddle with Homo sapiens to such an extent that we would no longer be Homo sapiens.

5. The Rise and Fall of Civilizations

Mumtaz and Mohsin Review

Human civilizations have emerged on Earth and declined in due course of time (Mumtaz and Mohsin 2015). The history of civilizations stretches, through generations from ancient Sumerian, Egyptian to Classical and Mesoamerican through Christian and Islamic civilizations and successive appearances of Sinic and Hindu civilizations (Huntington, 1996). Civilization and culture both refer to the overall way of life of a people, and a civilization is a culture writ large (Huntington, 1996). According to modern Western scholarship, culture and civilization involve the values, norms, institutions, and modes of thinking to which successive generations in a given society have attached primary importance (Bozeman, 1975).

The Qur'an, as a decisive factor and remainder for the civilizational development, presents repeatedly the accounts of historical records of past nations, civilizations and of their rise and fall. It prompts people to reflect on the responses of previous generations towards the True, Authentic and Universal Knowledge and Worldview. The Qur'an emphasizes this on the basis of ethical and empirical approach, spiritual and moral understanding and universal and people – oriented perspective.

The True and Realistic Worldview, against false worldviews, becomes an integral aspect of the process of civilizational development. The Qur'an indicates to this reality:

> Then there are some who say, "We believe in Allah and the Last Day", whereas they do not believe at all. They thus try to deceive Allah and the Believers, but they succeed in deceiving none except themselves and they realize it not. In their hearts is a disease which Allah has increased all the more and a painful doom is in store for them for the lie they utter. Whenever it is said to them, "Spread not disorder on the earth", their reply is, "We only seek to put things right". Beware! they do spread disorder but they realize it not. And when it is said to them, "Believe sincerely as the other people have believed", they reply, "Should we believe as fools have believed?" Beware! they themselves are the fools, but they know it not. (al-Baqarah: 8-12)

Throughout history, the source of True, Authentic and Universal Knowledge has been the revealed books of Allah SWT in the respective times and the words and deeds of Prophets, peace and blessings upon all of them, whom Allah SWT appointed for particular societies to guide them. Rejection of True One God and the Day of Resurrection and conscious transgression of the boundaries of ethics, spirituality and morality; consistent insistence in doing sins and wrongs are the significant reasons for the fall of civilizations.

Wiener Analysis

Current dramatic breakthroughs in archaeological science provide persuasive new insights about the collapse of past civilizations (Wiener 2018). Winston Churchill once remarked "The longer you can look back, the farther you can look forward." Armed with DNA analysis of the movements of human populations, animals, and pathogens; strontium isotope analysis documenting the movements of people over the course of individual lifetimes; analyses of past climates through beryllium as well as oxygen isotope analysis, together with the drilling of deep lake, sea, glacier, and cove cores, and the study of annual growth of tree rings, among other scientific advances, we can look back upon the history of humankind as never before. Five causes of collapse appear paramount: major episodes of climate

change, crises-induced mass migrations, pandemics, dramatic advances in methods of warfare and transport, and human failings in crises including societal lack of resilience and the madness, incompetence, cultic focus, or ignorance of rulers.

Climate Change Collapse

Around 13,000 to 12,700 BC, the ice sheets that had covered parts of Europe, northern Asia, and North America down through New York City retreated, opening these areas to human occupation. The ice returned c. 11,000 BC, during the period known as the Younger Dryas, but by 9750 BC had largely retreated again to its approximate current configuration.

Around 6200 BC, changes in rainfall patterns (for which a periodic change in the earth's orbit has been suggested as a possible cause) led, inter alia, to the contraction of the savannah in North Africa, forcing humans to move to the banks of the Nile for water.

The First Historical Megadrought was associated with collapse of civilizations, encompassing at least all of West Asia and the Mediterranean world between 2300 and 2000 BC. For this major climate event we have both abundant scientific evidence. During these years' rainfall declined sharply, playing a major role in the collapse of many complex societies. It intensified major migrations, some violent in nature, accompanied by drastic changes in methods of warfare and transport, most notably the introduction of bronze weapons and sailing vessels, which may have carried not only invaders but also pathogens to which there was no local resistance.

Beginning around 2050 BC, a period of generally good climate lasting almost a millennium enabled the rise of powerful and prosperous states from Egypt to Assyria to Anatolia to Crete and later mainland Greece. Egypt was reunited at the beginning of the period into what is known as the Middle Kingdom. The grand palaces, magnificent tombs, and remarkable depictions of the human body in sculpture (the last particularly during the 12th Dynasty c. 1985–1775 BC) still arouse awe today.

At the end of the Bronze Age c. 1200 to 1050 BC, the return of adverse climate appears to have been a significant factor in the collapse of the Egyptian New Kingdom, the Hittite Empire, and the palatial culture of Mycenaean Greece. Pollen records indicate that the dry period covered a large area stretching at least from northern Turkey to the Nile Delta.

The climate improved by c. 800 BC and remained relatively benign in general through the Classical and Hellenistic periods in Greece, with the possible exception of a period of famine in the late 8th and 7th centuries BC contributing to the era of Greek colonization eastward toward Turkey and westward toward Italy, plus two colonies in Africa. This was also the period Phoenician expansion to the western Mediterranean, Carthage in particular.

Climate-technology-war interaction

This major decline from AD 250 to 270 was once again due to the combined effects of climate change, famine, migration, and an advance in transport plus warfare followed by pandemic. A drastic slackening of the movement of the Atlantic air mass across Europe and beyond produced a major drought, resulting in what has been called a "dust bowl" in Central Asia. The crisis in turn led to the invasions of the nomadic pastoralists from Central Asia and Eastern Europe known as the Huns.

In the 10th century, a period of general warming known as the Medieval Warm Period began. This period includes the special and counter-intuitive case of benign weather playing a major role in the destruction of cultures. It coincides precisely with the conquests of the Mongols under Genghis Khan, accompanied by widespread destruction and slaughter.

The Little Ice Age of c. AD 1300 to 1750 produced prolonged freezing winters and colder, damper summers in much of Europe, the Near East, and China as well, with famines common. Cold weather accompanied by famine reappears in Scandinavia around AD 1300, with land abandoned and marked population decline. By mid-century, the expansion of sea travel in the Mediterranean, which marked the beginning of the early Renaissance in Italy, brought with it the great plague known as the Black Death of 1347–51, which spread through Europe.

Forced migrations

The authors suggested that major episodes of climate change have had profound impacts upon cultural continuity, and that the interactions between climate change, famines, migrations, pandemics, and major innovations in the means of transport and warfare are critical in understanding the collapse of past civilizations. The cumulative stock of carbon emissions over the past century has increased the risk of destructive climate change in the future. We are now grappling with the effects of massive forced migrations in many places, particularly from the war-torn Middle East to Europe, from persecution in Myanmar, and from famine and tribal warfare in Africa.

The current danger

The risk of pandemics is ever present, as shown by the appearance in recent years of HIV, Ebola, Lassa, West Nile, Nipah, SARS, MERS, and the Zika virus, the transmission of which is fostered by the democratization of air travel. The Gates Foundation has estimated that if an influenza pandemic like that of 1918 erupted today, about 33 million people would die within the first six months. The drastic reduction in funding for the Centers for Disease Control and Prevention in the current budget seems clearly ill-advised.

The prospect of weaponized pathogens as noted, whether in the hands of states, terrorist groups, or deranged individuals; electronic warfare including cyber-attacks using digital weapons, which pose threats to critical power grids, information and communication networks, medical records and hospitals, financial systems, all personal records, and electronic voting; delivery of devastating cargoes of various types by drones; each menace compounded by advances in artificial intelligence. The internet provides a new conduit, with the prospect of future enhancement via 3-D printing, for making available deadly instructions, including recipes for biological pathogens. All are clear and present dangers.

Finally, the ongoing struggle between human failings including the madness, incompetence, or ignorance of rulers and their supporters versus societal resilience in the face of adversity is clearly evident today, together with the potential major impact of chance events, also present throughout history. In the words of Churchill: “Study history, study history. In history lies all the secrets of statecraft.” Continuing study of the collapse of past civilizations, as well as instances of survival under stress, aided by the recent dramatic breakthroughs in archaeological science described, will provide insights useful for the future.

The New World Order, Antichrist and Dajjal

The New World Order (NWO) is a conspiracy theory which hypothesizes a secretly emerging totalitarian world government (Wikipedia 2020e). The common theme in conspiracy theories about a New World Order is that a secretive power elite with a globalist agenda is conspiring to eventually rule the world through an authoritarian world government—which will replace sovereign nation-states—and an all-encompassing propaganda whose ideology hails the establishment of the New World Order as the culmination of history's progress. Many influential historical and contemporary figures have therefore been alleged to be part of a cabal that operates through many front organizations to orchestrate significant political and financial events, ranging from causing systemic crises to pushing through controversial policies, at both national and international levels, as steps in an ongoing plot to achieve world domination.

Before the early 1990s, New World Order conspiracism was limited to two American countercultures, primarily the militantly anti-government right and secondarily that part of fundamentalist Christianity concerned with the end-time emergence of the Antichrist (Dajjal). Skeptics, such as Michael Barkun and Chip Berlet, observed that right-wing populist conspiracy theories about a New World Order had not only been embraced by many seekers of stigmatized knowledge but had seeped into popular culture, thereby inaugurating a period during the late 20th and early 21st centuries in the United States where people are actively preparing for apocalyptic millenarian scenarios.

Those political scientists are concerned that mass hysteria over New World Order conspiracy theories could eventually have devastating effects on American political life, ranging from escalating lone-wolf terrorism to the rise to power of authoritarian ultranationalist demagogues.

Dajjal (Āl-Masīḥ Ad-Dajjal) is an evil figure in Islamic eschatology (Wikipedia 2020f). He is said to have come from several different locations, but generally from the East, usually between Syria and Iran, comparable to Christian understanding of the appearance of the Antichrist in Christian eschatology.

Dr Israr Ahmad explains Dajjal in light of Qur'an and Ahadith

Dr Israr Ahmad has explained the prediction of Dajjal (Antichrist) in light of Qur'an and Hadith (Video-2; Video-3). Dajjal Akbar (the Great) will be blind with one eye, according to Ahadith. Three Arabic letters Ka, Fa, Ra will be written over his forehead, which will be recognized by the believers. He will claim to be God and his powers would be so much that he would make a tour of all the towns around the Globe during a period of 40 days. His vehicle (airplane) will measure about 80 meters in width. He will call the people which will be heard around the Globe. He will command the sky and the rivers.

He will heal the chronic patients and make alive the dead ones. He would have got an army of devils who would get transformed into human shapes and pretend to be parents of some people; who will tell them to recognize Dajjal as God. Human cloning in practice today, has been examples of bringing dead into alive organisms. He will be followed by women blindly in the end while their sons, husbands and fathers would try to restrain them. Military Dictator President of Pakistan General Musharaf allocated 33% seats to women in the national parliament, with one stroke of pen.

In continuation of fitnahs (trials) of Dajjal, two great fitnahs have emerged during the twentieth century in the Indo-Pak subcontinent, which were apparently different from each other, but hit the Muslim Ummah, severely. One fitnah was Qadyanyyat launched by Ghulam Ahmad Qadiani, who claimed to be a

Prophet, Masih Moud, Mehdi Maud, violating the fundamental pillar of finality of prophet Muhammad (SAW) as the final Prophet of Allah SWT. The second fitnah was istihfaf (underestimation) of Hadith initiated by Sir Syed Ahmad Khan in interpretation of Islam and propagated by Ghulam Ahmad Pervez, as an attempt to misguide the Muslims.

Kitabul Fitan describes Malhamatul Uzma, the Great War and other signs of Qyamat (Al-Saat), the Dooms Day. The non-Muslim powers are trying hard to prevent Muslim nations from getting nuclear powers. Hazrat Mahdi will emerge among the Quraysh family. Hazrat Eissa AS (Masih, Jesus) will return to Earth and live as a follower of Prophet Muhammad (SAW).

Dajjal is a word used for deceiving, e.g. covering gold through gold water to present it as gold. Dajjal will fabricate the facts to confuse the people. Prophet Muhammad (SAW) has said, “Thirty liars will come out of my Ummah who will claim to be prophets from Allah SWT”. A big liar has emerged in the recent past as Mirza Ghulam Muhammad Qadiani the false prophet, whose teachings are being spread widely the world over using CNN, etc., funded by non-Muslims. Islamic Republic of Pakistan has declared Qadiani as non-Muslims but it’s a partial action.

Dajjali Civilization, blinded with one eye

Dajjal’s arrival is based upon the Dajjali civilization. The Renaissance began in Italy about 1350 and in the rest of Europe after 1450 and that it lasted until about 1620. It was a historical era with distinctive themes in learning, politics, literature, art, religion, social life, and music. The selfish approach of humans ran after material knowledge but ignored the divine knowledge that descended from God through Prophets AS.

Adam AS was created as the first man and Khalifa of Allah SWT on Earth. He was granted two types of knowledge; i) material knowledge of the names and things and; ii) divine knowledge guiding man towards success in this World and the Hereafter. Human beings developed material knowledge, building the huge empire of Science and Technology. Computer Science has made wonders in human history and genetic engineering is on the way to develop creatures, including human beings, with extraordinary quality parameters.

Development of human robots is on the way, lacking any quality of mercy or humane feelings. Such material knowledge has brought disasters in human life. If the material knowledge was supplemented with divine knowledge, there would have emerged no evil effects through indiscriminate use of material knowledge. But humans have focused on the first knowledge only, leading to development of Dajjali Civilization, blinded with one eye.

The Universe is comprising of creatures created by God, the Creator and Sustainer. The material knowledge has been exploring the creatures through physical and biological sciences; however, it has totally ignored the Creator. Similarly, this World has been preferred, ignoring the Hereafter; the material human body has been nourished and protected, ignoring the soul; establishment of welfare state has been human priority, ignoring the day of judgment. Hence the Dajjali Civilization is blinded with one eye. Dajjali Civilization has misguided the human species towards seeking material gains, ignoring the ultimate realities revealed through divine guidance by God.

In Surah Kahaf Prophet Muhammad (SAW) was prevented from ignoring the poor believers and attending towards the rich unbelievers of Macca. Allah SWT has declared those involved in material

gains of worldly things, as in great loss. They have gone astray. Otherwise, the people may believe that the Prophet is preferring material things, wealth and political power in this World over the Hereafter. The Prophet was advised to pay attention to the believers who call Allah SWT during the day and night. Allah SWT has mentioned the worldly things like sons and wealth as means of trials and the good deeds of the believers as everlasting.

This is the great Dajjali Fitnah. He has covered the real life of the Hereafter with the glamorous worldly life full of sins. The great entity of Allah SWT, the Almighty, was covered by the material knowledge and greatness of the Universe. Spiritual needs of the human soul were covered by biological needs of the material body. Human preferences were disordered towards worldly life over the divine reality of the Hereafter.

So, Dajjal is a Civilization, prevailing over the World today, based upon deceiving the people and deeply rooted in the Christian concept of Trinity, denying oneness of Allah SWT. However, Dajjal is also a particular person. The physical features of Dajjal have been mentioned in Ahadith by Prophet Muhammad (SAW). Dajjal would be having command over the physical laws of nature at its peak. He would have got in his hands, almost all the powers belonging to Allah SWT. He would be having all the miracles granted by Allah SWT to the prophets, previously.

He will call the ghosts, the souls/spirits of the dead people (although they would be really Shaitans) who will talk with the people. He will convert the barren land into a fully fertile, propagative and cultivated one. Distance will carry no meaning for him and he would be having very quick modes of transportation, like modern airplanes and spaceships, emerging in today's world through science and technology. His one step would be in a city and the other in another city. His voice would be heard by the people around the Globe. He will cut a person into two pieces, walk-in between the two pieces, reconstruct him and make him alive again.

In the light of Hadith we cannot say whether Dajjal would be a single person or two. According to Dr Israr Ahmad, he cannot reach a conclusion, however, his dominant opinion is that Dajjal will be two persons. One will claim to be Eissa AS (Jesus Christ); and he would be Al Masih ud Dajjal. The Prophet Muhammad (SAW) has predicted that such people would be 30 in number, out of which 5 were found during his lifetime and Mirza Ghulam Ahmad Qadiani is the one found during the twentieth century with an expanding number of followers and increasing powers with the passage of time.

Preparations for arrival of Dajjal reviewed by Dr Israr Ahmad

Another Dajjal would be a Jew claiming to be Masih. His time has come nearer and Dr Israr Ahmad has explained his arrival. The Jewish state has been established after a period of 2000 years, in the form of Israel under the auspices of the United Nations. This was a continuation of the establishment of Zionism as an organized movement, generally considered to have been founded by Theodor Herzl in 1897. The Balfour Declaration was issued by the British government in 1917 during the First World War announcing support for the establishment of a "national home for the Jewish people" in Palestine, then an Ottoman region with a small minority Jewish population. It provided a legal base to the Jewish settlement in a foreign land, establishing Israel in 1948. The two intervals of twenty years facilitated the establishment of Israel, the Home of Dajjal, through internationally coordinated and continuous conspiracies.

The Six-Day War, also known as the 1967 Arab–Israeli War, was fought between 5 and 10 June by Israel and the neighboring states of Jordan, Syria, and Egypt. In 1956 Israel invaded the Sinai Peninsula in Egypt, with one of its objectives being the reopening of the Straits of Tiran that Egypt had blocked to Israeli shipping since 1950. Israel was eventually forced to withdraw, but was guaranteed that the Straits of Tiran would remain open. A United Nations Emergency Force (UNEF) was deployed along the border, but there was no demilitarization agreement. Israel has enhanced its influence over Arab countries and started colonizing them. The human and natural resources of Arab countries would be developed by Israel through application of science and technology, enhancing their dominance further and preparing grounds for the arrival of Dajjal.

Dr Israr has identified two targets of the Jews to facilitate the arrival of Dajjal Akbar; demolition of Masjid Aqsa and building the Third Temple. Malhamatul Uzma and other news of Kitabul Malahim have predicted various events. The first Prime Minister of Israel Ben Goryan replied to a question that Third Temple will be built while Dome of Rock and Masjid Aqsa may be demolished by earthquake anytime. Jerusalem has been kept away, intentionally, from the peace negotiations. The Muslim and Christian settlements are gradually being removed from Jerusalem to accommodate Jews.

Wars will be held between Muslims and Christians at the onset of Malhamatul Uzma. In the meantime, a Jew will claim to be Masih and to establish Greater Israel. He would be Masih ud Dajjal. To kill him the real Masih (Hazrat Eissa AS or Jesus the son of Marry) will descend from sky. He will be assisted by armies from the East and from Arab regions, led by Imam Mehdi RA. The last war will be held with Jews and each Jew will be killed by Hazrat Eissa AS, including Masih ad Dajjal.

The Jews are awaiting the arrival of Masih as their Savior. Prophet Isa Bin Mariam was born but the Jews denied him and they are awaiting Masih ad Dajjal, the False Masih. The Jews presume that they have crucified Masih AS, which is wrong as the Qur'an says that he was lifted to heavens alive and will come back before the Day of Judgement. The Jews are awaiting arrival of Masih ad Dajjal, the False Masih while the Muslims and Christians are awaiting arrival of Masih the Abrahamic Prophet before Prophet Muhammad (SAW). Both will come one after another.

Arrival of Masih ad Dajjal will be a great Fitnah (trial) for the Muslims, especially Arabs. The reason is that Arabs have got Allah’s Book, the Qur’an in their own language and they have ignored it. Same is true for all Muslims, implementing a secular system of governments. The last Masih, Dajjal ul Akbar, will claim to be God and will emerge near the onset of Doomsday, the Day of Judgment.

The Doomsday will be preceded by three major signs as per saying of Prophet Muhammad (SAW); i) rising the sun from the west; ii) emergence of Masih ad Dajjal; iii) The Dabbat al-Ard, or Beast of the Earth, will come out of the ground to talk to people. After the appearance of these signs the facility of tawbah (repentance to Allah SWT for the sins) will terminate.

Shifting of US Embassy to Jerusalem

The Trump Administration has shifted US Embassy from Tel Aviv to Jerusalem, in a deeply controversial move that angered Palestinians and drew widespread regional condemnation (Al-Jazeera 2018). US President Donald Trump – who in December 2017 declared Jerusalem as Israel’s capital, a move long sought by Israel – addressed the ceremony via a recorded video message.

"Today we follow through on this recognition and open our embassy in the historic and sacred land of Jerusalem, and we're opening it many, many years ahead of schedule," Trump said. He added that the US "remains fully committed to facilitating a lasting peace agreement". His comments came as at least 55 Palestinian demonstrators in Gaza were killed by Israeli forces along several points near the fence with Israel.

More than 2,400 others were also wounded as the Israeli army fired live ammunition, tear gas and firebombs at protesters assembled along several points near the fence with Israel. Many were in critical condition, and there were fears the death toll could rise in what was the deadliest day for Palestinians killed by Israeli forces since the 2014 Gaza war. But addressing the Jerusalem ceremony in person, Israeli Prime Minister Benjamin Netanyahu praised "our brave soldiers protecting the border … as we speak today" and said the embassy move marked a "glorious day". Before Netanyahu's speech, Trump's son-in-law and senior adviser Jared Kushner told those assembled at the ceremony Jerusalem was the "eternal heart of the Jewish people".

The demonstrations in Gaza followed a week-long protest calling for the right of return for hundreds of thousands of Palestinian refugees to the areas they were forcibly expelled from in 1948. President Mahmoud Abbas reiterated that "With this step, the US administration has cancelled its role in the peace process and has insulted the world, the Palestinian people and the Arab and the Islamic nation and it has created incitement and instability," Nabil Abu Rudeineh said. The Palestinian Authority described Trump's decision to recognize Jerusalem as Israel's capital and the US embassy move as "blatant violations of international law and disregard to the core values of justice and morality".

Turkey's President Recep Tayyip Erdogan accused the US of disregarding "rights and justice" by going through with the embassy move. "History and humanity will never forgive the injustices done to our Palestinian brothers," Erdogan said.

Arabia (2018) reported "Short and Long-Term Repercussions of U.S. Embassy Relocation to Jerusalem". The short-term, the decision will further destabilize the region at an already tumultuous time. The move coincides with the culmination of a series of protests, called the Great March of Return, that began on March 30 in Gaza, to commemorate the Nakba. The relocation of the U.S. embassy will only add to the Palestinians' anger and increase the likelihood of attacks on Israeli and American targets.

In the longer term, the relocation will cement perceptions of the U.S. as a biased mediator, thus serving as the nail in the coffin of US-brokered peace talks. The move will also embolden Israel in its policies towards the Palestinians. The U.S. has long been perceived by the Arab world as a close ally of Israel, but it was able to maintain some degree of credibility by taking a neutral stance on issues such as Jerusalem. The leader of the Palestinian Authority, Mahmoud Abbas, told the Organization of Islamic Cooperation (OIC) during a recent conference that the U.S. would be banned from all future peace talks. He added, "[W]e shall not accept any role for the United States in the peace process; they have proven their full bias in favor of Israel."

Masjid Al Aqsa and Third Temple

One opinion of secular Israelis is to establish an economic block comprising Arab countries and Israel, with dominant role of Israel and this can be seen in today's scenario. However, opinion of the hardliners Israelis is to establish Greater Israel before the arrival of Dajjal. Masjid Al-Aqsa Mosque, located in the

Old City of Jerusalem, is the third holiest site in Islam. The mosque was built on top of the Temple Mount, known as the Al Aqsa Compound and used by Muslims as Qibla before turning to Kaaba in Makkah.

In the 1980s, Ben Shoshan and Yehuda Etzion, both members of the Gush Emunim Underground, plotted to blow up the al-Aqsa mosque and the Dome of the Rock. Etzion believed that blowing up the two mosques would cause a spiritual awakening in Israel, and would solve all the problems of the Jewish people. They also hoped the Third Temple of Jerusalem would be built on the location of the mosque.

The Third Temple would be the third Jewish Temple in Jerusalem, after Solomon's Temple and the rebuilt Second Temple. Although it remains unbuilt, the notion of and desire for a Third Temple is sacred in Judaism, particularly Orthodox Judaism, and anticipated as a place of worship. The prophets in the Hebrew Bible called for its construction to be fulfilled prior to, or in tandem with, the Messianic Age. The rebuilding of the Third Temple also plays a major role in some interpretations of Christian eschatology.

Arab Peace Initiative 2000

The Arab Peace Initiative was a Saudi-led initiative to end the Arab-Israeli conflict. The initiative called for a complete withdrawal from the occupied Arab territories, reaching a just solution to the issue of Palestinian refugees, and accepting the establishment of an independent and sovereign Palestinian state. In turn, the Arabs would consider the Arab-Israeli conflict over, sign a peace agreement and establish normal relations with Israel.

Sheikh Imran's Beyond September 11

Sheikh Imran has reviewed the events Beyond September 11, the attack on America (Video-4) . Allah SWT has blessed mankind with the Holy Quran, explaining all things. ˹Consider, O Prophet, ˺ the Day We will call against every faith-community a witness of their own. And We will call you to be a witness against these ˹people of yours˺. We have revealed to you the Book as an explanation of all things, a guide, a mercy, and good news for those who ˹fully˺ submit (Al-Qur'an, 16:89).

Qur'an explains the strange world we are living in. Political globalization is leading towards One Government, pushing out the United Nations. Globalization of world economy will enslave all of mankind. Emergence of one way of life is leading the world towards one culture. Everybody in the world is having the same diseases, born and die the same way. Same is happening to environment. Another strange thing is happening. Prophet Muhammad (SAW) has said, Islam was strange in the beginning and it will be strange in the end. Unluckily, we are living in an age when the real Islam is becoming stranger and stranger. Today, Islam is different from the rest of the World, from the globalized political order, economy and culture. Islamic modernism has emerged as a strange creature, a progressive reinterpretation of Islam to fit within the modern world.

America was attacked on September 11 in circumstances that were absolutely suspicious. There is a massive cover-up of the Bush Administration. Those who concealed the information, will eventually release it to bring down America. The only beneficiary of these attacks has been the State of Israel. "A Muslim Response to the attack on America", a small booklet may be used as a wakeup call. Those who have attacked America must have been linked to Mossad of Israel. The two aircrafts attacking America boarded many Saudis, most of them completing their studies in US institutions.

It may be an attempt to tear apart Saudi Arabia from the USA. Saudi Arabia and Israel have got strange similarities. Both the States have been established, secured and guaranteed by the same Forces. Israel is going to expand and to control Arab oil, the bloodline for the whole world, especially Europe and Japan. Israeli Prime Minister Ariel Sarone visited Masjid al Aqsa along with 1000 soldiers to provoke Palestinians and give rise to another Intifada, the legitimate resistance against oppression.

Aljazeera TV is projecting the Israeli atrocities and spreading anger among Arabs. Televisions around the world are portraying a Domino Effect that governments around Islam are going to fall but Islam is rising. Authentic governments representing Islam will now emerge. This would be a painful development for the Jews. The Jews think, "if we don't do something, we will be destroyed". They will go for preemptive attacks with magnificent use of state of the art military technology, impressing the World as the new ruling state. Europe and Japan will be choked by Israel through the oil embargo and the rest of the World would use the UN to force Israelis for withdrawal from the occupied territories.

The US will withdraw from the UN leading it towards collapse. Israel will hold off to the foot of naked aggression. They will take control of the oil. The US dollar will corrupt. Israel will rule over the World. Than a day will be like a week. Full time Muslims will be killed while the part time Muslims will be made silent through harassment. People will be identified through bank accounts. Prophet Muhammad (SAW) has predicted such a situation by saying that a person passing through a grave would wish to be in the grave instead of the dead man because of the oppression. The same people launched crusade against Islam, terminated the Ottoman Califet. arranged the September 11, established Israel and will rule the World through Israel. These people are the European, first dressed up as Christian and now dressed up as Jews.

The day would be like a week. At the end of the week the Sea of Galilee will dry up in about 50 years; the Son of Marry will come down with his hands on wings of two angels; Dajjal will appear and rule from Jerusalem. Imam Mahdi will appear from Madinah; the true Messiah will kill the false Messiah. Gog and Magog will be destroyed. An unbeatable army will come from Khorasan and reach Jerusalem. Israel will be destroyed by Muslims, liberating the Holy Land, as per Sahih Hadith of Tirmidi, Sahih Bukhari and Sahih Muslim. Muslim leaders have no courage to quote this Hadith in public. Jews will be killed by Muslims and a tree will invite a Muslim to kill a Jew hiding behind that plant.

Muslims have betrayed the Qur'an as evident from the verse: "O believers! Take neither Jews nor Christians as guardians—they are guardians of each other. Whoever does so will be counted as one of them. Surely Allah does not guide the wrongdoing people". If Muslims stay like that, they disrespect the Qur'an and they will pay a price for that. Muslims are depending upon the Christians and Jews for their protection. Liaqat Ali Khan, Ex-Prime Minister of Pakistan handed over Pakistan to the US as a client state as he did not study Qur'an. You are no more an Australian or Bangladeshi but a Citizen of the World government by the World Government, which obviously would be the Jews.

This will be a hard time for Muslim Ummah as mentioned by Allah SWT: "You will surely find the most bitter towards the believers to be the Jews and polytheists and the most gracious to be those who call themselves Christian. That is because there are priests and monks among them and because they are not arrogant" (Al-Qur'an, 5: 82). This is the political landscape of the World Government.

What about the economic landscape? Paper money collapses. The International Monetary System collapses, replaced by a new one controlled by Jews, over the World. Your way of life as a Muslim will be

strange, Gharib, as mentioned in the Hadith. If you refuse to dress like them and keep Islamic identity, they will be coming after you. You will be refused a job if you don't take whiskey.

Surah Kahaf advises mankind to leave the globalized cities. "Since you have distanced yourselves from them and what they worship besides Allah, take refuge in the cave. Your Lord will extend His mercy to you and accommodate you in your ordeal. (Al Qur'an, 18: 16)" Today, masses are moving into the cities, the countryside left denuded. You should disconnect from the Godless World and move to the countryside with fertile land and water and establish the law of Deen, not at macro level, because that is not possible but at micro level.

That Muslim village cannot threaten the State but the residents have got the right to protect their women and children; hence they will train their kids as warriors. They would prefer to die as a man than to live as a slave. The public life and masjid will not allow anything other than the Qur'an and Sunnah. The Muslim village will be one Jamaat, having one Ameer; and will be an island of Islam in the Godless World. Such a village has already been launched at Ladysmith in South Africa with a strange Dawah setup.

The poor will get out of poverty through a free and fair market based upon: i) no borrowing or lending on interest basis; ii) utilizing Sunnah Money and; iii) if you plant you will reap, if you don't, you will not. The Banks are not planting but they are reaping what others are planting. They are sucking the blood of the masses. Ordinary banks are managing Riba through the front door while Islamic Banks are doing it through the backdoor.

Twenty million black South Africans would get out of poverty through Muslim Villages and would thank God that Islam has finally arrived. This is the real Dawah because you have established the truth before preaching it; and this is not isolationism.

Pakistan Regime Change 2017

Pakistan holds immense geopolitical significance due to its strategic location at the crossroads of South Asia, Central Asia, and the Middle East (Mamchi 2023). Its proximity to Afghanistan, Iran, China, and India positions it as a key player in regional politics and current affairs. The country's location serves as a balancing factor in the region's power dynamics, and its strategic importance is evident in the way major world powers, such as the United States and Russia, have sought to engage with Pakistan to expand their interests in South and Central Asia.

In 2017, Pakistan, under the leadership of Muhammad Nawaz Sharif (PMLN), was reportedly thriving before being pushed towards socio-economic turmoil through a regime change favoring Imran Khan (PTI). This change, allegedly orchestrated through international conspiracies and implemented by powerful local elements within the judiciary, military, and media (Irfan Siddiqui, Naya Daur TV, Video-15), marked a significant turning point for the nation.

During Nawaz Sharif's tenure, the PMLN government addressed serious issues such as the energy crisis, terrorism, and street crimes. The currency value was stabilized, foreign exchange reserves were maintained, and the IMF Program was completed, marking a historic achievement for the country. Inflation was kept at 3.5%, and significant Chinese investment of $60 billion was secured under CPEC projects. The stock exchange reached new heights, instilling hope among the populace.

These achievements were made despite the challenges posed by the London Plan, orchestrated by Tahir ul Qadri (PAT), Imran Khan (PTI), and Zaheer ul Islam (ISI), which led to the 2014 Dharna (Sit-In Protest), the Dawn Leaks controversy, the Joint Investigation Team probe, and the eventual disqualification of Prime Minister Nawaz Sharif on July 28, 2017, by Chief Justice Saqib Nisar of the Supreme Court of Pakistan. The disqualification was based on the non-receipt of a receivable salary from his son's company, a decision that seemed scripted like a Hollywood film. Support for the London Plan came from six other military generals: Shuja Pasha, Asif Bajwa, Asif Ghafoor, Faiz Hameed, Raheel Sharif, and Qamar Bajwa.

Imran Khan's ascension to Prime Ministership led to significant economic and social decline. Inflation soared to 25%, foreign loans equaled those accumulated over the previous 70 years, and there was widespread discrediting of parliament and national institutions, alongside a distortion of social norms. This substantial loss to the nation will not be easily remedied in the near future. Lobby firms were hired to facilitate the passage of resolutions in the US Congress and UN Human Rights bodies against Pakistan's national interests. The controversial and dismal performance of Khan's administration during its three-and-a-half-year rule further rendered his party unpopular, as per a report by the Washington DC-based New Lines Institute (Bokhari 2022).

The Imran Khan-led political crisis represents the tumultuous endgame of the fifth attempt since the late 1950s by the country's powerful army to dominate the political system. The international political strategic position of Pakistan was greatly affected by the regime change in 2017.

Trump's Deal of the Century 2020

The Trump Peace Plan is called by its proponents "the deal of the century," phrasing used by Prime Minister Benjamin Netanyahu in a joint press conference with Donald Trump announcing the plan. The Palestinian President Mahmoud Abbas called it "slap of the century" and the secretary general of the Palestine Liberation Organization Saeb Erekat tweeted that it would be known as the "fraud of the century". The Economist called it the "steal of the century". In the aftermath of Israel walking back its initial pledge of "immediate annexation", a Haaretz commentator wrote of the "joke of the century".

Deal of the Century reviewed by Al Jazeera

Peace to prosperity – a Vision to improve the lives of the Palestinian and Israeli people, has been published by White House at Washington DC, USA. Al Jazeera (2020) reviewed the Deal under perspective of the last 100 years of Israeli-Palestinian negotiations. Part A is a political framework which proposes:

- Redrawing the boundaries to incorporate the vast majority of illegal Israeli settlements into Israeli territory and annexing the Jordan Valley (section 4);
- Recognizing "Al Quds" which is the Arabic word for Jerusalem as the capital of a future State of Palestine while also, in contradiction, recognizing Jerusalem as the "undivided capital" of Israel (section 5);
- Requiring that the State of Palestine remain fully demilitarized (section 7); and
- Denying the internationally-recognized Right of Return by Palestinian refugees (section 16).

Part B contains an economic framework which promises to "facilitate more than US$50 billion in new investment over ten years". This includes the construction of a tunnel between the West Bank and Gaza Strip and an artificial island off the coast of Gaza to develop a port and an airport.

The Deal contradicts international resolutions and norms as follows:

- Jerusalem, the holy city shared by Muslims, Christians and Jews, features prominently in UN Security Council Resolution 478 (1980). The resolution rejected Israel's claim to Jerusalem as the "complete and united" capital of Israel and was adopted with 14 votes to none, with the United States abstaining. Trump's 2020 plan contradicts Resolution 478 by calling for Jerusalem to "remain the sovereign capital of the State of Israel".
- Hundreds of thousands of refugees fled to neighboring Arab states in 1948 and again after the war in 1967. According to UN Resolution 194 (1948): “Refugees wishing to return to their homes and live at peace with their neighbors should be permitted to do so.” Under Trump's new plan, the "Right of Return" of Palestinian refugees, which is a universally recognized right in international refugee law, is mentioned once but only to say - "there shall be no right of return".
- The Israeli occupation is the largest and the longest-lasting occupation of modern times. Israel militarily occupied the Gaza Strip and the West Bank, including East Jerusalem, in June 1967. The term "occupation" is strikingly missing from Trump's 2020 plan. The only mention of the word is as a synonym for job or profession.
- Israel's building of settlements in the Occupied Palestinian Territories is illegal under international law. By 2018, there were 611,000 Israeli settlers living in 250 settlements in the occupied West Bank, including East Jerusalem. Trump's 2020 plan legitimizes these settlements and says that Israel "will not have to uproot any settlements, and will incorporate the vast majority of Israeli settlements into contiguous Israeli territory."
- Trump's plan repeatedly describes Israel as the "Jewish State". This language has not been used to refer to the State of Israel since its founding in 1948. The Balfour Declaration (1917), which was a public pledge by Britain, promised the establishment of "a national home for the Jewish people" in Palestine.
- The international community as represented by the UN has overwhelmingly condemned Israel's occupation of the Palestinian Territories. In 1947, the UN General Assembly voted in favor of partitioning Palestine between Jews (with control of 55% of the land) and Palestinians (with 45%). Trump's new conceptual map would annex huge parts of the occupied West Bank and give Palestinians control of only 15% of historical Palestine.

Normalization of Israeli-Saudi Relationship

The Saudi-Israeli had a Get-Together in NEOM (Cafiero, 2022) during Prime Minister Benjamin Netanyahu’s recent visit to NEOM as a sign that Israel’s relationship with Saudi Arabia is continuing to warm. Yet the kingdom is not open to full-fledged diplomatic relations with Israel thus far, even if Saudi Arabia is moving in the direction of a more normalized relationship with Tel Aviv.

“The Saudis have made it clear that they want to normalize and have a certain rapprochement with Israel, but under the table,” Andreas Krieg, a professor at King’s College in London, told Inside Arabia. “I think what we’re going to see is a development like what we’ve seen between the UAE and Israel over the past 15 years or so, where there were delegations flying back-and-forth with officials going

back-and-forth. All of it, but with plausible deniability. The [Saudi] population is not ready. Many senior members of the royal family are not ready to take that step."

Arguably, Saudi Arabia's main reason for welcoming the Arab-Israeli diplomatic deals earlier in 2020 had to do with Riyadh wanting other Arab/Islamic countries to test the waters on the normalization front. There is now also talk about Saudi Arabia pressuring Pakistan into opening formal relations with Israel too.

Beyond shared threat perceptions of Iran and other state and non-state actors in the region, Saudi Arabia and Israel have other reasons for wanting to build a stronger partnership even if it remains, at least for now, unofficial. Technology is one important area. As the kingdom seeks to make progress on Vision 2030 (Saudi Arabia's ambitious economic diversification agenda), Israeli technology, expertise, and innovation has the potential to help the hydrocarbon-rich Arab country decrease its dependency on oil.

Dr. Michael Stephens, an associate fellow at the London-based Royal United Services Institute, responded on Twitter to the Netanyahu-MbS-Pompeo meeting by "wondering if NEOM will be a sort of Hong Kong type arrangement . . . like going to Saudi, but not going to Saudi. Easy visas, designed for coming and going with relative ease, and free trade zones for maximum economic impact."

According to Israeli officials, Saudi Crown Prince Mohammad bin Salman (MBS) hosted Israeli Prime Minister Benjamin Netanyahu and U.S. Secretary of State Mike Pompeo in NEOM, the futuristic techno-city in northwest Saudi Arabia that symbolizes the crown prince's plans to remake the kingdom's economy (Sachs and Cofman 2020). Saudi Arabia denies that the meeting took place, with Foreign Minister Faisal bin Farhan saying flatly: "No such meeting occurred." Air-traffic watchers saw that a plane previously used by Netanyahu flew from Israel to the area near NEOM, spent several hours on the ground, and returned, seemingly confirming the leaks in Israel. The reports set off a frenzy of speculation about a formal opening of ties between the two countries, which have had covert contacts going back to the 1960s.

The Gaza Genocide of 2023

The Gaza Genocide 2023 started with an unprecedented assault on Israel on 7 October by the the the Palestinian militant group Hamas launched, with hundreds of gunmen infiltrating communities near the Gaza Strip (BBC 2023). It was a result of prolonged oppression of Palestinian territory by occupying Israeli forces since 1967, in spite of the UN Resolution of 1947, 181 (II), when the General Assembly decided to partition Palestine into two states, one Arab and one Jewish, with Jerusalem placed under a special international regime. About 1,200 people were killed, while the Israeli military says more than 200 soldiers and civilians, including women and children, were taken to Gaza as hostages. More than 14,000 Palestinians in Gaza have been killed in air and artillery strikes carried out by the Israeli military in response, according to the Hamas-run health ministry in Gaza.

The UN General Assembly Resolution 77/247 of 9 January, 2023 reiterated that all measures and actions taken by Israel, the occupying Power, in the Occupied Palestinian Territory, including East Jerusalem, in violation of the relevant provisions of the Geneva Convention relative to the Protection of Civilian Persons in Time of War, of 12 August 1949, and contrary to the relevant resolutions of the Security Council, are illegal and have no validity, and demands that Israel, the occupying Power, comply fully with

the provisions of the Fourth Geneva Convention of 1949 and cease immediately all measures and actions taken in violation and in breach of the Convention.

A historian of genocide, believe that there is no proof that genocide is currently taking place in Gaza, although it is very likely that war crimes, and even crimes against humanity, are happening (Bartove 2023). The crime of genocide was defined in 1948 by the United Nations as “the intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such.” The author showed his greatest concern watching the Israel-Gaza war unfold is that there is genocidal intent, which can easily tip into genocidal action. The author called for stopping Israel from letting its actions become a genocide with out waiting a moment longer.

Establishing Neom City at Saudi Arabia

Spread over an area of 26,000 km, it will be a joint project of Saudi Arabia and Israel (Video-8/5) facilitated by Prince Muhammad Bin Salman under Vision 2030. This would be a joint project of Saudi Arabia, Jordan, Egypt and Israel; supporting the economies of Arab countries and shift the dependence of Saudi Economy from Oil to Science and Technology.

Neom will be built as Saudi Arabia's $500 Billion Mega City, the top secure area of the World. Robots will outnumber humans in the City. This will be a Special Economic Zone of Saudi Arabia. Neom stands for New Mustaqbil; new future. The City will be 33 times larger than New York and will be a global hub, connecting Asia, Europe and Africa and reaching 70% of World population. Neon will attract top talent from around the World. The City will focus on Energy and Water, Mobility, Biotech, Food, Technological and Digital Sciences, Advanced Manufacturing, Media, Entertainment and Livability. As a City from scratch, technology would be the cornerstone of development process.

Neom City and Dajjal

Saudi City Of Neom Explained by YouTube Chanel, Viral Story (Video-6). This most advanced and modern city of the World, was inaugurated by Prince Muhammad Bin Salman during 2017. Building of the city Neom, meaning the New Future, has been declared as a sign of the Doomsday as per Ahadith of Prophet Muhammad (SAW). A palace has been built on a hill near Medina for Dajjal. He will look at Medina from his Palace but he will be prevented from entering Makkah and Medina by the angles holding swords. After building Dajjali Palace, the construction of Dajjali City, the Neom is in process. The city is being funded and sponsored by Israel as a step towards establishment of Greater Israel, before arrival of Dajjal. Israel would be expanded to the level of the kingdom of Prophet Suleiman AS. Saudi Laws would not be effective in this city. All forms of vulgarity and sins would be permissible here.

The city will be operated by robots with the most advanced form of technologies. Flying taxis, artificial rain for cultivation of crops and artificial moon with capacity to send pictures to Earth. Investment would be made through economical funding under World Bank. Trade will be promoted with all countries through this city with an intention to control the people through management of their economies. Israel would be having better control over Saudi Arabia.

Saudi Arabia has already provided access to Israeli Airlines and boycotted Qatar along with their allies. Such arrangement is facilitating dominance of Israel over Saudi Arabia and the whole World, expect Makkah and Medina, as Ahadith of Prophet Muhammad (SAW). Saudi Government is allowing vulgarity including concerts and dance parties in the country.

Egyptian Ex-President Muhammad Morsi (1951 – 2019) a politician and engineer, was removed from his office by General Abdel Fattah el-Sisi in a coup d'état after protests. An Islamist affiliated with the Muslim Brotherhood organization, Morsi led the Freedom and Justice Party and was killed in prison. Qatar's king Sheikh Tamim bin Hamad al-Thani has been an opponent of Israel.

End of Time – Opinion of Abrahamic Religions

An essay on comparative eschatology among the three Abrahamic faiths—Judaism, Christianity, and Islam—and how beliefs about the end times express themselves through foreign policy and conflict, was reviewed (Leonhard 2010). The essay has analyzed what Jews, Christians, and Muslims believe about the End Times, How Those Beliefs Affect Our World.

Jerusalem is the epicenter of eschatology—the focal point of the apocalyptic scenarios of Judaism, Christianity, and Islam. All three faiths think of the city as their own. All three faiths gave rise to prophecies that the end of human history will occur there. The story of how these three systems of belief think about the end times and how those visions of apocalypse affect our world underlies much of what occurs in our world today.

Since 1967 and the Six Day War, American presidents have often joined international efforts to stop Jewish settlement on Israeli-occupied territory in Palestine, because building homes on the disputed land provokes angry responses from the dispossessed Arabs in the region and disrupts efforts to achieve a Middle East peace. What you may not know is that the Israeli term for the disputed settlements (hitnakhluyot) refers to Biblical promises from God to Israel concerning ownership of the land, and that some groups of settlers believe that by building homes there, they are helping to hasten the arrival of the Messiah and the end of human history.

The United States and her European allies oppose Iranian nuclear developments, fearing that the Shiite government there is determined to make weapons of mass destruction. Some pundits believe that the Iranian nuclear weapons program is unstoppable and that the US should acquiesce and formulate a nuclear deterrent strategy similar to one used against the Soviets in the Cold War. What you may not know is that the former Iranian President Mahmoud Ahmadinejad claimed to be in contact with a man born in the 9th century who is still alive today, and he is an adherent of an Islamic school that teaches students that the end times have arrived and that in the wake of an exchange of nuclear weapons, God will intervene to save Muslims and destroy their enemies.

All three beliefs—Judaism, Christianity, and Islam—claim descent from Abraham. It should not surprise us, then, that all three beliefs contain compelling and controversial visions of how human history will end, because according to the record in Genesis, God's promises to Abraham included universal and eschatological dimensions. "I will make you into a great nation and I will bless you; I will make your name great, and you will be a blessing. I will bless those who bless you, and whoever curses you I will curse; and all peoples on earth will be blessed through you." (Genesis 12: 2, 3 [NIV]).

All three faiths believe they are the heirs or benefactors of those promises, and even modern adherents think about the world around them in terms of how those promises and the prophecies that followed will play out.

In a general sense, the multifarious descendants of Abraham—Jew, Christian, Muslim—today organize themselves into two opposing camps. One invests in the establishment and focuses on improving the

world and ameliorating the dour circumstances of poverty, war, disease, crime, and hatred. The other despairs of the world and clings to the hope of divine intervention, foreseeing the inevitability of heavenly violence to eradicate unbelief. Both camps read the same prophecies but understand them in diametrically opposite ways.

Opinion of Dr Israr Ahmad about End of Time

End of Time was explained by Dr Israr Ahmad in the light of prophecies of the last Prophet of Abrahamic Religions, Muhammad (SAW), conveying the message of Allah SWT ,through Qur'an Karim (Video-7). A great war, World War III, Malhamatul Kubra, has been predicted, greater than World War I and II killing millions of people across the Globe. The event is not far away. The stage is being prepared for that. Those who struggled for establishment of the Religion of Allah SWT, will succeed in the War and those involved in their daily routine will suffer. Majority of the Muslims and Believers are engaged in taking care of the worldly affairs of themselves and their kids; nobody is worried about the Hereafter. Khilafat i minhaj nabuwwah, will be established covering the whole world, at the end of the War.

The Khilafat (Caliphate) is a general leadership over all Muslims in the world (Minhaj al-Nabuwwah, 2021). Its responsibility is to implement the laws of the Islam and convey the Islamic Message to the rest of the world. The Khilafat is also called the Imama as both words have been narrated in many Sahih Ahadith with the same meaning. The Khilafat ruling system bears no resemblance to any of the governments in the Muslim world today.

The events preceding the onset of the End of Time, have been reviewed by Dr Israr Ahmad (Video-7). A hadith has been quoted from the Prophet Muhammad (SAW), referred by Imam Sakhawi in Muakifaat; by Maulana Ismael Shahid in Maansab I Imamate and by Maulana Abul A'ala Maududi in Tajdeed o Ahya i Deen. According to the Hadith, the first phase of Islamic history would comprise Nabuwwah and Rahmah, the period of Prophet and blessings, which will remain as long as Allah SWT wishes. It will be followed by Khilafat on the pattern (Minhaj) of Nabuwwah. It will be followed by cruel kingdoms and then by oppressive kingdoms.

Finally, the period of Khilafat will recur. Matters will be settled as per Sunnat un Nabawi. The blessings of Islam would be spread over the Globe. People would be happy on Earth and in the skies. The sky would release water in the form of blissful rains and the Earth would release all its treasures for the benefit of the people. Zabur, the holy book of Dawood (David) has mentioned that Good Servants of Allah SWT will rule the whole World. Globalization of the religion of Allah SWT revealed through Prophet Muhammad (SAW) would cover every house and tent on the surface of the Earth. Presently, we are observing globalization of capitalism through Geneva Protests.

Through television we think we know how people in New York or Los Angeles live, but it's a one-way street (World-Trade-Observer 1999). Do we know how people in Chile live? In Holland? In Pakistan? The Thatcherite-Reagan revolutions came about because popular majorities in these two major Western economies concluded that the old government-directed economic approaches simply were not providing sufficient levels of growth. Thatcher and Reagan combined to strip huge chunks of economic decision making power from the state, from the advocates of the Great Society and from traditional Keynesian economics, and hand them over to the free market. How's that again? Reagan won because he was a polished liar. He certainly did try to destroy much of the federal government. The exception was the

military, upon which he lavished so much money (most to private defense contractors) that he ran up the national debt to catastrophic heights.

It would be naïve to think that somehow we can stop the global juggernauts of McDonald's or Taco Bells from opening franchises everywhere around the world. They proliferate because they offer people something they want. They want heroin too. And decent jobs. Do we (whoever we are) give them those?

6. The Sustainable Development Approach

The 2030 Agenda for Sustainable Development

The Heads of State and Government and High Representatives, meeting at the United Nations Headquarters in New York from 25-27 September 2015 as the Organization celebrates its seventieth anniversary, decided on new global Sustainable Development Goals, bringing the document "Transforming Our World: The 2030 Agenda for Sustainable Development".

This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. Eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development. All countries and all stakeholders, acting in collaborative partnership, will implement this plan. The 17 Sustainable Development Goals and 169 targets which were announced demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what these did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

Alongside continuing development priorities such as poverty eradication, health, education and food security and nutrition, it sets out a wide range of economic, social and environmental objectives. It also promises more peaceful and inclusive societies. It also, crucially, defines means of implementation. Reflecting the integrated approach that was decided on, there are deep interconnections and many cross-cutting elements across the new Goals and targets. Goal 2 calls for ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture.

They envisaged a world free of poverty, hunger, disease and want, where all life can thrive. They envisaged a world free of fear and violence. A world with universal literacy. A world with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social well-being are assured. A world where commitments could be reaffirmed regarding the human right to safe drinking water and sanitation and where there is improved hygiene; and where food is sufficient, safe, affordable and nutritious. The Declaration called for strengthening the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks. Goal 3 called for ensuring healthy lives and promoting well-being for all at all ages.

The Declaration mentioned that this is the time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiraling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Goal 8 called for promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

As per report (GSDR 2023) the world has moved forward on some fronts, such as the deployment of zero-carbon technologies as one of many climate mitigation strategies. Progress has been halted in many

areas, partly as a consequence of a confluence of crises – the ongoing pandemic, rising inflation and the cost-of-living crisis, and planetary, environmental and economic distress, along with regional and national unrest, conflicts, and natural disasters. As a result, overall progress towards the 2030 Agenda and the Goals has been severely disrupted in the last three years, yet every inch of progress matters and counts.

Compounding the effects of the pandemic is the highest level of State-based armed conflict since 1945. By the end of 2020, around two billion people were living in conflict-affected countries. In 2021, the number of refugees and internally displaced persons was the highest on record at 89 million, and, for the first time, global military expenditure exceeded $2 trillion. Between June and September 2022, around 89 per cent of the least developed countries, 93 percent of landlocked developing countries and 94 per cent of small island developing States had food inflation above 5 per cent.

The Report put forward an organizing framework of six entry points for transformation: human well-being and capabilities, sustainable and just economies, sustainable food systems and healthy nutrition patterns, energy decarbonization with universal access; urban and and peri-urban development and the global environmental commons. Deploying four "levers" were suggested to bring about transformation in these entry points: governance, economy and finance, science and technology, and individual and collective action along with a fifth lever, "capacity-building", as the development and or mobilization of capacity is essential for the transformation process.

Rumi, Iqbal and SDGs

A review was presented at DSP 2017 at Konya, connecting Rumi, Iqbal, Tolerance and UNSDGs (Qureshi et al 2017).

Mevlana Jalaluddin Rumi

"Listen with ears of tolerance! See through the eyes of compassion! Speak with the language of love". This is a quote of Mevlana Jalaluddin Rumi, a 13th-century Persian poet, jurist, Islamic scholar, theologian, and Sufi mystic. His poems have been popular in many regions of the world and impacted Persian, Turkish, Ottoman Turkish, Azerbaijani, Punjabi, Hindi, and Urdu literature, as well as the literature of some other Turkic, Iranian, and Indo-Aryan languages including Chagatai, Pashto, and Bengali. He has been described as the most popular poet and the bestselling poet in the United States.

Born in Balkh, Afghanistan on September 16, 1207, Rumi inherited his position as the head of an Islamic school at the age of 25 years. One of Baha' ud-Din's students, Sayyed Burhan ud-Din Muhaqqiq Termazi, continued to train Rumi in the Shariah as well as the Tariqa, especially that of Rumi's father. For nine years, Rumi practiced Sufism as a disciple of Burhan ud-Din until the latter died in 1240 or 1241. Rumi's public life then began: he became an Islamic Jurist, issuing fatwas and giving sermons in the mosques of Konya. He also served as a Molvi (Islamic teacher) and taught his adherents in the madrassa. During this period, Rumi also traveled to Damascus and is said to have spent four years there.

It was his meeting with the dervish Shams-e Tabrizi on 15 November 1244 that completely changed his life. From an accomplished teacher and jurist, Rumi was transformed into an ascetic. On the night of 5 December 1248, as Rumi and Shams were talking, Shams was called to the back door. He went out, never to be seen again. Rumi's love for, and his bereavement at the death of, Shams found their

expression in an outpouring of lyric poems, Divan-e Shams-e Tabrizi. He himself went out searching for Shams and journeyed again to Damascus. Hussam-e Chalabi, assumed the role of Rumi's companion and implored Rumi to write more. Rumi spent the next 12 years of his life in Anatolia dictating the six volumes of this masterwork, the Masnavi, to Hussam. In December 1273, Rumi fell ill and died on the 17th of December in Konya.

Mehdi Amin Rizwin mentioned a basic difference of interpretation of religions between the jurists (foqahâ) and the sages (hokamâ), including the gnostics in the Islamic tradition (ʿâref). The article then argues that Rumi rejected the epistemological foundation of the claim that one can know the absolute Truth through feqh, or any other means, thus opening the path for the relativity of knowledge and understanding of religious truth. The article shows how the Masnavi and Divan-e Shams criticize the epistemological reliability of the senses, as well as the notion that truth can be known by authority, or by pure reason and philosophy (though he does not thereby reject rationalism).

Rumi seems to privilege the intuition and spiritual attainment as more morally reliable modes of knowing than philosophy, theology, nor law – though even this remains limited. The logical conclusion of these epistemological limitations is that only the Absolute knows the Absolute absolutely, and individual human beings possess only a relative understanding of the Absolute Truth, and must therefore exercise tolerance, respect, understanding, inclusiveness and epistemological humility. Mevlana advocates for mutual co-existence among the people as below:

"Come, come, let us appreciate each other, know the value of each other."

Allama Muhammad Iqbal

Allama Iqbal (November 9, 1877 – April 21, 1938), widely known as Muhammad Iqbal, was a poet, philosopher, and politician, as well as an academic, barrister and scholar in British India who is widely regarded as having inspired the Pakistan Movement. He is called the "Spiritual Father of Pakistan" and produced literary work in both the Urdu and Persian languages.

Iqbal has been admired as a great Muslim philosophical thinker of modern times. He acknowledges Rumi as his guide without reservation, as reported by International Iqbal Society. No thinker except Rumi has acquired the title of the Pir (guide) from Iqbal. He has whole heartedly paid him tribute and respect nearly in all his books. This tribute arouses much curiosity when it is paid by Iqbal, an eminent poet-philosopher with numinous vision and outstanding scholarship. The most important factor which impressed Iqbal to acknowledge Rumi as his guide was Rumi's interpretation of the Quran and his profound love for the Holy Book and the Prophet (Peace Be Upon Him).

"The light of the Quran is hidden in his (Rumi's) breast, the cup of Jam fades in the presence of his mirror".

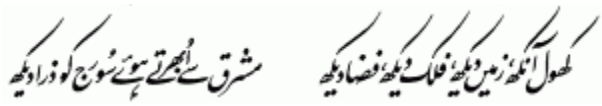
Said Rumi: Before they can repopulate any ancient ruin, do you not know that first of all they must destroy the foundation?

"The principle of the ego-sustaining deed is respect for the ego in myself as well as in others," said Iqbal. He was a great believer in forbearance and tolerance as described by Professor Emerita Riffat Hassan, an internationally acclaimed religious scholar and activist. E. M. Forster points out about Iqbal, "whatever his opinions, he was no fanatic, and he refers to Hindus and Christians with courtesy and respect.

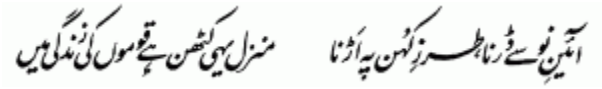
Iqbal's Perfect Person, says Professor Bausani, has something to teach us: "First: that tolerance and all those so-called virtues of modern man are not in contradiction to the simple strong faith in the transcendental. 'Wherever you turn' – to use a Koranic sentence – 'There the countenance of God stands.' Second: Man who is merely an impotent being completed by Him who is 'nearer to him than his jugular vein' becomes omnipotent and creator of new spiritual worlds. Third: to achieve this, a preliminary act of submission is necessary: in Dante's philosophy it is repentance, in Iqbal's a declaration of slavery – but slavery of God and only of God. Of that God whose glory permeates through all the Universe.

Iqbal condemned racism and called it to be discouraged in all forms as it is in opposition to one of the fundamentals of Islamic polity – namely, the equality and brotherhood or sisterhood of humankind. Iqbal considers "nasab-parasti" to be one of the reasons for the downfall of the Muslims.

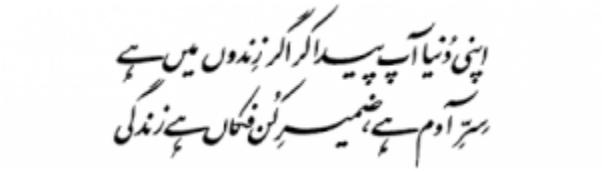
For the Dairy Science Park, the following guidelines of Iqbal may be taken into consideration as these fits into its birth in Egypt, exploration of livestock resources in the war hit region; the centuries old production and marketing practices, service delivery; and future vision:



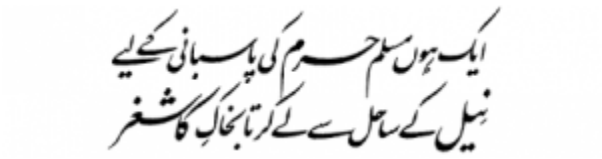
Open your eyes and look above, Look at the streak of dawn.



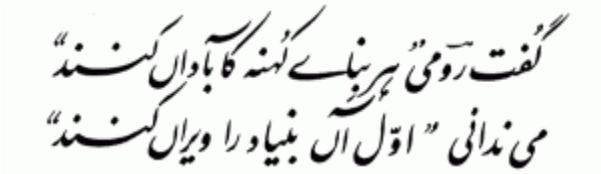
To be afraid of the new ways, to insist on old ones; This is the only difficult stage in the life of nations.



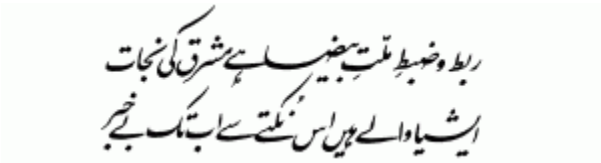
If you are among the living, fashion your own world; Life is the secret of Adam, the essence of the words Be and it was.



May the Muslims get united in watching over the Shrine; from the banks of the Nile to the deserts of Kashghar.



Said Rumi: Before they can repopulate any ancient ruin; do you not know that first of all they must destroy the foundation?



The cohesion of the Radiant Community is the salvation of the East; but the people of Asia are so far ignorant of this principle.

Promoting Tolerance and War on Terror

Earnst-Ulrich Petersmann of the European University Institute called for complimentary Global Compact, between the UN and UN specialized agencies as well as worldwide public organizations. The universally recognized human rights need to be integrated into laws and practices of these intergovernmental organizations. The globalization of human rights and economic integration laws offers mutually beneficial synergies protection and enjoyment of human rights depending upon economic resources, reducing discrimination and enabling a welfare-increasing division of labor. Economic, legal and political integration are a function of human rights protecting personal autonomy, legal and social security, peaceful change, individual savings, investment, production and mutually beneficial transaction across frontiers.

Human rights should be recognized in global integration laws as empowering citizens, constitutionally limiting national and international regulatory powers and as requiring governments to protect and promote human rights in all policy areas across the national frontiers. Human rights promote the effectiveness of international organizations. The war of everybody against everybody is transformed into peaceful cooperation based on equal legal rights. Diversity of individual values need to be protected and majorities have to be prevented from imposing their values upon minorities, human markets and markets. It will promote peaceful coexistence, tolerance and scientific progress.

Under clause 36 of the Declaration of Sustainable Development Agenda of the United Nations, the heads of the States/Governments and Higher Representatives pledged to foster inter-cultural understanding, tolerance, mutual respect and an ethic of global ‘citizenship and shared responsibility. They acknowledged the natural and cultural diversity of the world and recognized that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.

The historic land of the Pashtuns across both sides of the Durand Line in Pakistan and Afghanistan, has been the site of international conflicts since the recorded history of Alexander the Great, the British Empire, the Soviet Invasion and the US-led War on Terror. Across the border, three million Afghan refugees have settled in Pakistan. The military operations carried out in the tribal agencies and FATA regions, have resulted in internally displaced persons, leaving behind a huge number of sheep, goats and

cattle unattended. This has led to loss of indigenous genetic resources and loss of livelihood support to the people; promoting terrorism further, instead of combating it. Dairy Science Park recommends rehabilitation of these livestock resources, development of livestock-based entrepreneurship and establishment of processing and marketing backup to these units, with special focus on Biorisk management; with the final goal of bringing a stable peace in the region.

Emergence of the Dairy Science Park

The Dairy Science Park has been utilized as a platform to coordinate the activities focused at industrialization of livestock and poultry sector for generating self-employment for the youth and hygienic food production for local consumption and export in northwestern Pakistan and the adjoining regions of Afghanistan, Tajikistan and China.

It has emerged at the University of Agriculture, Peshawar, engaging the youth in productive economic activities. Medium-sized units are being networked with services providers, markets, and emerging entrepreneurs. The United Nations has accepted Dairy Science Park as partner for implementing Sustainable Development Goals, notified at SDG Action 9671. Activities of DSP have been displayed at http://dairysciencepark.org.pk/.

Pakistan's Khyber Pakhtunkhwa and Federally Administered Tribal Areas (FATA) have been the sites of international conflicts. The region is mostly mountainous and arid, rich in natural resources, predominantly livestock like sheep, goats, cattle, buffaloes, and poultry. The total value of livestock heads is Rs.1.09 trillion (US $10 billion). However, the huge resource base can neither provide good economic return to the producers, nor quality food to the consumers. These holdings threaten public health safety. The main reasons behind this state of affairs are poor socio-economic status of the farmers, lack of resources and focus on part of the state institutions, and a hostile marketing system. The sector issues were summarized as: i) Poor practices at farmers' and industry level and limited scope of education system create hurdles in food safety and entrepreneurship; ii) Slaughter houses/poultry butchers delivering meat contaminated with dung, flies, cats and dogs create threats to public health; iii) Rising level of unemployment and underutilized/unskilled labor at farms, factories and marketing networks; iv) Price capping of livestock products restricts industrialization; v) Utilization of medium sized farms for entrepreneurship, technical, financial, marketing and regulatory support to these units is not included in the Mandate of any government or other agencies; vi) Slaughterhouse lacking and Halal Tayyab; vii) Poor state of resource utilization; viii) The miserable transportation status; ix) Private companies selling meat/milk items of unknown quality and Halal status, at inappropriate rates; x) Input suppliers are grabbing the major share of farmers' produce and deliver low quality inputs; xi) Live birds/livestock transportation and marketing in open places and vehicles contaminate the environment and present a dirty picture of the Region and the Muslims; xii) Marketing dead/sick animals/birds and their food products with no check on Halal/hygienic status; xiv) Halal bones are exported at throw away prices and Haram gelatin is imported at very high rates; xv) Legal courts ban import of useful products and export of economically viable products.

Academia Industry Linkages

The Faculty of Animal Husbandry and Veterinary Sciences consider the Khyber Pakhtunkhwa province of Pakistan as a natural resource base, possessing livestock and poultry resources with an estimated value

of Rs.1.09 trillion (FAO 2019). Meat is an important product and its proper management can overcome the protein deficiency of the nation and produce surpluses for export, not less than US$ 2.00 billion.

An organized effort has been made at the Faculty under the Dairy Science Park to utilize the livestock resources with optimum efficiency with a focus on industrialization. A biennial series of international workshops has been in progress on Dairy Science Park; successfully holding three conferences at Peshawar, Pakistan during November 2011, 2013 and 2015 and the Fourth International Conference and Industrial Exhibition has been scheduled at Konya, Turkey on November 1-5, 2017. Each workshop was attended by 450+ participants, from academia, government and sector organizations.

Under the DSP the laboratory setup at the Animal Health Department is being utilized for investigating disease problems in the medium sized livestock and poultry herds/flocks. DSP operationalized the University Feed Mill. On recommendation of the Senior Minister LG, KP the Chief Minister approved the DSP Task Force.

Poultry Science Department has introduced new concepts in postgraduate research like maggot meal silkworm meal, mealworm, omega-3 enriched eggs, iron and zinc enriched eggs, quality control through drug residues, aflatoxin levels, antibiotic resistance, herbal probiotics as growth promoters, improvement meat quality through dietary antioxidants supplementations, stress management through antioxidants, semen evaluation, breeding through artificial insemination, introduction and evaluation of rabbits for meat production.

The sheep, goats, poultry, dairy and beef animals are being studied for their productivity, product quality and business potential. Carcass yield and quality, processing of meat, palatability and consumers' preferences are documented. The local livestock and poultry breeds are investigated for productivity and business incubation. The University Cattle Feed Mill was run under a lease arrangement with a private partner. It has provided a gateway to the University System for applied research and an effective outreach setup for the mediums sized commercial livestock farmers.

Biorisk Management was integrated into DVM curriculum through a series of five training workshops (2015-2019) with Sandia National Laboratories USA, involving 8 universities, public and private sectors and accommodating 60 persons-events at Amsterdam, Dubai, Bangkok, Phuket and Colombo.

UN SDGs Action 40154

DSP has been accepted by the United Nations as SDGs Action 40154 for SDG 2, 3 and 8 covering Food Security, Health Safety and Entrepreneurship Development and has been notified SMART on their website. Annual Reports on SDGs achievements have been submitted for 2015, 2016 and 2017 and the UN has declared DSP as SMART initiative, accessible at https://sdgs.un.org/partnerships/dairy-science-park. DSP invites individuals and organizations for partnership to serve the people of the war hit zone of north-western Pakistan and the adjoining Afghanistan's regions.

The following Sustainable Development Goals (SDGs) have been covered so far under the Dairy Science Park:

Good Governance:

Producing more with less, while balancing consumption, and reducing losses, must be our target for livestock production (FAO 2018). Livestock supply chains are resource-hungry, using large amounts of land, water, nutrients and energy and contributing significantly to greenhouse gas (GHG) emissions. As consumption of animal products is expected to increase, the livestock sector needs to produce more with less. Unsustainable production and consumption not only contribute to inefficient use of resources but are also the source of lost economic opportunities, environmental damage, poverty and health problems. This Mission has been focusing on sustainable livestock production through good governance and improved marketing linkages under Livestock Technopark Peshawar, ensuring livestock based food security, United Nations Sustainable Development Goal 2 (UN SDG #2).

Food safety:

Livestock has been a source of milk, meat and eggs which need to be ensured for health safety, as 70% of human diseases are originated from livestock related facilities. A prolonged exercise has been in place in the province for biorisk management at Veterinary Research Institute and Dairy Science Park, University of Agriculture Peshawar. A good number of persons-times (105) have been trained abroad under sponsorship of Sandia National Laboratories USA, ranging from students, university teachers, researchers, provincial ministers, government officers and industry representatives. This activity will continue for covering stakeholders across food value chain in the province, through the proposed BRM Center of LTP at Khyber Medical University. This activity covers UN SDG 3.

Women Empowerment:

Women Empowerment has been an important segment of the livestock value chain. Women University Mardan (WUM) has been imparting education in various life, social and business sciences. Women have been at risk from food borne/zoonotic diseases through milk and meat handling and livestock husbandry and lack appropriate income sources. The Vice Chancellor WUM has participated in the biorisk management curriculum development workshop at Colombo, Sri Lanka and Dairy Science Park IV at Konya, Turkey, along with ten delegates from WUM. The University teachers intend to work on biorisk management, food processing, quality control and entrepreneurship development. Women would be empowered in line with UN SDG 5, SDG Action 9671.

Good practices:

The adoption of best practices can lead to larger gains in natural resource-use efficiency. Rebalancing diets to reach nutritional recommendations can also have significant impact on natural resource use and GHG emissions. Efficiency can further be improved by reducing food waste and losses along supply chains, and targeting different stages of those chains in different regions, depending on priorities. Because improvements are needed along the whole life cycle of products, this goal requires the involvement of various stakeholders, including consumers, policymakers, retailers and industry representatives. However, adapting and enforcing new technologies in local environments, and instituting supporting policies and infrastructure to encourage adoption, will be the greater challenge.

Renewable energies like biogas and solar systems would be utilized for energizing farming, processing and other facilities across food value chain, in line with UN SDG 7.

Employment Generation:

Khyber Pakhtunkhwa and the merged tribal areas have been rich in natural resources especially livestock resources. Livestock Sector is the major source of livelihood in the province. However, the young generation face difficulty in finding employment in the provincial public or private sectors, as the livestock farming is predominantly subsistent with 1-4 animals which keeps more than 70% of the livestock population. Only 3% of the livestock population is in peri-urban commercial farms of over 30 animals each. Forty percent of sheep population, however, is kept in units of 50-350 animals. Livestock/agriculture farming, processing, marketing and services network has absorbed about 44% of the labor force, almost 80% of the population relies on this sector for a significant part of their income (FAO, 2015). DSP focuses on transformation of the livestock sector with an autonomous governing setup for generating decent employment across the value chain in line with UN SDG 8.

Responsiveness:

Responsiveness has been included in the policy document for supplying safe and affordable food of animal origin to domestic and international markets. The public sector organizations have been established with a predefined mandate of livestock extension, research and education. The available limited resources can only respond to the routine requirements of clients; like a civil veterinary hospital has got facilities to receive a sick animal along with the owner, to examine the animal; record the history, get chit fee and provide a prescription for treatment of the disease. Occasionally awareness campaigns are held for the introduction of good practices, but here again, the farmers expect some free medication to treat the diseases instead of some good advice to the farmer for enhance profitability of the farm. Research wing of the Livestock Department as well as the Universities lack the facilities to respond to the demands of the investors and potential farmers/processors/entrepreneurs regarding availability of funds, marketing support, administrative and legislative support. The proposed Livestock Technopark Peshawar (LTP) is expected to fill up the resources/communication gap between the public sector organizations and the beneficiaries as an academia-industry-government-society nexus. This would be in line with SDG 16 calling for peace, security and prosperity in the war-hit region of Khyber Pakhtunkhwa and help in ending the cycles of conflicts of interests between livestock producers, products processors, consumers and the public sector organizations, as per UN SDG 16.

Competitiveness:

KP Livestock Policy 2018 has accommodated competitiveness under its vision statement. Livestock products produced under the farming system in the Khyber Pakhtunkhwa have to compete with products from other parts of the country and abroad. Competitiveness cover prices as well as quality of the product. Both these parameters could be improved through training in good practices, applied research on the prevailing bottlenecks and business incubation through academia-industry interactions. Selecting good breeds with better immunity against the prevalent diseases, growth, fertility and productivity potential, are indicative of better profitability, sustainability and competitiveness. Breed has to be backed up by better management practices through comfortable housing; cost effective feeding meeting

the nutritional requirements of animals, breeding and reproductive management strategies, and record keeping for the purpose of monitoring health, productivity and business parameters of the livestock production and processing units. A network of entrepreneurs in farming, products processing, services delivery and marketing partnership would be able to find a place in the competitive local and international market. Raising competitiveness of the local products would help in achieving all the SDGs mentioned above.

National Eco-Security System Pakistan (NESS-Pak)

The Preparatory Committee for National Eco-Security System Pakistan (NESS-Pak) was established, to be hosted by the Dairy Science Park (DSP) at Peshawar. The Preparatory Committee NESS-SC Pakistan is headed by Prof M Subhan Qureshi as President and Prof Sher Bahadar Khan is working as Secretary. The Preparatory Committee is working with Abdul Wali Khan University Mardan (AWKUM) to promote the formal establishment of the NESS-SC Pakistan and National Eco-Security System Research Center (NESS-RC) . The decision was made in an online meeting with the senior executives of NESS-International Science Network (ISN), Mr. Dexin Tian, Founder, Chief Scientist and Secretary General of NESS-ISN and Dr. Yan Xie, International Coordinator of NESS-ISN and Associate Research Professor, Institute of Zoology, Chinese Academy of Sciences.

“One Target – An Eco-Security for All: Haikou Initiative” – An Eco-Security System for All” was launched during the 2022 NESS International Science Congress. Prof M Subhan Qureshi, President Dairy Science Park supported the initiative which was acknowledged through a certificate.

The National Eco-Security System (NESS) International Science Network, Haikou Forestry Bureau, and Hainan Normal University, together with the other 22 co-organizers, sponsored the first NESS International Science Congress and Workshop on An Eco-Security System for All People in Haikou, Hainan Province, China, between 18th and 19th November, 2022. 202 experts and scholars from 156 institutions in 26 countries attended the onsite-online hybrid meetings and reached the following consensus on the keynote of jointly building “an Eco-Security System for All People”.

Several global reports warn that the current global ecological crisis has severely threatened the long-term survival of human beings. The opposition, conflict, and social division caused by various factors make it difficult for human beings to gather strength and unite to deal with the deteriorating ecological disaster. Humanity has once again found themselves standing at a crucial crossroads.

At the 2017 annual meeting of the World Economic Forum in Davos, Chinese President Xi Jinping proposed to the international community a Chinese plan: “Building a Community with a Shared Future for Mankind (CSFM) to achieve win-win sharing”. The concept of building a CSFM has been written into many resolutions of the UN and is recognized and endorsed by more and more countries.

“An Eco-Security System for All People” – that is the Ecological Security (Eco-Security) conditions necessary for survival of human beings, and National Eco-Security Systems (NESS) that each country builds at the national level in order to maintain Eco-Security for its own people – are the guarantee bottom-line and an important cornerstone of CSFM.

The 2022 NESS Congress proposed to the international scientific community and scientists from all over the world the following initiative call: i) the scientists, universities, scientific research institutes and other institution in various countries to pay close attention to the Eco-Security bottom-line necessary for the

long-term survival of the children of ourselves and our own countries, and to actively support and participate in relevant scientific research and collaborative actions in their countries and; ii) the international scientific community, universities, research institutions, and international organizations to pay attention to the Eco-Security targets needed for the sustainable survival of all children and mankind around the world, form consensus and actively support and participate in relevant scientific research collaborations and joint actions around the theme of establishing “an Eco-Security System for All”

The following guidelines were agreed upon, in the online meeting between DSP and NESS-ISN representatives for NESS Pakistan: i) Eco-security concept would be introduced among local community and public/private support organisations. Food security initiatives would be integrated with eco-security to conserve the local animals and plants, against the invasive high yielding breeds and varieties. Social support would be attracted to support the protected area systems of biodiversity; Biorisk Management initiated under the DSP would continue to protect public health and the environment. Entrepreneurship development across the food value chain would be promoted to help the local community in finding access to quality foods and decent employment. Policy guidelines would be developed to support pastures, ranges and forest areas for better productivity, avoiding environmental hazards; ii) Joint actions would be launched involving multiple stakeholders from various disciplines to reach the ultimate goals of “An Eco-Security System for All People (ESSAP)”. ESSAP calls each country to maintain Eco-Security for its own people as the guarantee bottom-line and an important cornerstone of CSFM; iii) the Eco-Security System would be split into five Components as follows: i) Environment Security; ii) Biological Diversity; iii) Food Security; iv) Public Health Security and; v) Livelihood Security.

Participation would be attracted from various professional disciplines and segments of the society. Scientists would be invited to promote scientific research and cooperative actions on the Eco-Security bottom-line necessary for the long-term survival of people in their own countries; and call on the international scientific community to promote scientific research cooperation and joint actions to reach the Eco-Security goal needed for the survival of all mankind.

Prof Muhammad Subhan Quershi, President Dairy Science Park Pakistan and Chief Patron SunSaviour Pakistan attended the 2024 International Congress on an Eco-Security System for All People along the Belt and Road at Shennongjia National Park of Hubei Province on May 27 to 30, along with Prof Sher Bahadar Khan, Principal CAHVS, AWKUM Mardan. The Congress was a follow up of the concept presented at the 2017 annual meeting of the World Economic Forum in Davos, by the Chinese President Xi Jinping, a Chinese plan: “Building a Community with a Shared Future for Mankind (CSFM) to achieve win-win sharing”. The concept of building a CSFM has been written into many resolutions of the UN and is recognized and endorsed by more and more countries.developed by the National Eco-Security System (NESS) International Science Network, Haikou Forestry Bureau, and Hainan Normal University, together with the other 22 co-organizers.

The following work plan was presented: a) National Research Center for National Eco-Security System Pakistan (NRC-NESS-Pak) will be established at AWKUM Mardan; b) IRAD AWKUM Conference papers will be shared with NESS for their international database; c) The next International NESS Conference will be held at AWKUM in cooperation with NESS-ISN Beijing; d) The Preparatory Committee NESS-Pak will hold National Workshops in coordination with HEC/PSF and other sponsors for issues identification and strategy development to respond to the issues. At the Species Forum on May 27 a session was held on

Principles for Species Research and Conservation Priority Setting. Prof Qureshi presented a paper on “Exotic High-Yielding Animals Threaten Indigenous Species”.

Khunjerab National Park (KNP) was presented at Changbaishan Conference on Global Geoparks & World Biosphere Reserves and Pakistan Ecotourism Profile 2024 was published (Annex-5).

The First International Solar Expo and Conference #ISE2024 was held on June 1-2, 2024. The Event was attended by delegates from the industry, civil society, academia and government organisations. The Event was organised by Prof M Subhan Qureshi, as Chief Patron, Engr Zeeshan Saeed Shah CEO, Engr Saad Rashid CTO, Engr Irfan ul Haq Qureshi Coordinator General, senior staff of SunSaviour and Volunteers. Recommendations of the Conference have been included (Annex-6).

7. Our Place in the Universe

The Dogan analysis at Charles Sturt University Australia

The Position of Human Being in the Universe according to Islam was analyzed by Dogan (2013), Charles Sturt University, Australia. Humans, by nature, strive to acquire a variety of skills and abilities throughout their lifespan. In order to define the identity and nature of humankind properly and to be able to grasp his/her true essence, two aspects of life should be scrutinized and handled separately. Whilst one aspect is related to the question "What is a human being in his or her essence?". The other fundamental question that needs to be raised is "Who has he or she become?" Consequently, these two aspects are concerned with the formation and development of a human being, analyzing what he/she was at birth whilst also focusing on what he/she has become through actions, preferences and achievements.

The true human identity does not particularly enslave the individual to the surrounding society, politics, race or the current culture; rather it lets one evaluate and criticize all this, and thereby exceed their boundaries and create a new culture. A human being, in their lifetime is forever undergoing change, learns to adapt to change and develops themselves. It is this human ability and experience that separates them from other created beings.

Humankind is created in the best form of creation with both inner and outer beauty and potential. Despite his/ her relative, insignificant minuscule special occupation of earth, his/her value is equal to the entire universe, because God exclusively assigned him/her as His vicegerent on earth. The Qur'an mentions humans as the vicegerent, or representative of God: Remember (when) your Lord said to the angels: "I am setting on the earth a vicegerent." The angels asked: "Will you set therein one who will cause disorder and corruption on it and shed blood, while we glorify You with Your praise (proclaim that You are absolutely free from any defect and that all praise belongs to You exclusively) and declare that You alone are all-holy and to be worshiped as God and Lord." He said: "Surely I know what you do not know." (Al-Qur'an, 2:30).

Angels were already aware that humankind was prone to causing disorder, corruption, and bloodshed through the Protected Tablet (*lawh mahfuz*) and asked God the question in the verse above, in order to understand the Divine Wisdom in setting humankind on the earth as vicegerents. In the face of disgusting scenes in terms of corruption in human values, they wondered: "what is the wisdom in God's creating and allowing such things?" The angels did not know that among the human species the prophets, saints, scholars, scientists, wise and ethical people will appear and contribute to effecting justice and harmony on earth.

Endowing him/her with intuitive knowledge and skills, God has granted authority to mankind to intervene, create and control things to some extent-in the overall plan of his/her sojourn on earth. Armed with this endowment, mankind would gain sovereignty in their own realm on earth and also act freely in the universe, on behalf of God. With this authority humankind judges, makes decisions and takes action in the name of God. One of the reasons for the angels asking God the question under discussion was that human's overall physical nature also embodied seeds of evil along with the potential for good.

What was taught to Adam, the forefather of humanity, were seeds of comprehensive knowledge or sciences, which would be taught to humanity in its worldly life, just as every race and blood group was

included in Adam's loins. People who came after Adam have progressed these seeds and established sciences and disciplines in many different areas. Intellect is the foundation of morality and good character, because it is through the intellect that one attains awareness of his/her relationships with the environment and those around him/her. However, besides intellect, natural instincts also have an effect on the conduct and behavior of individuals. The intellect and natural instincts might come into conflict, because natural desires are not given to humans in balance and harmony. The duty of controlling natural desires and disciplining them is left to the human free will. If mankind would act according to his natural instincts only, he/she would cease to continue to exist in a lofty human dimension.

It is possible to define human beings according to their natural and achieved capacity. The physical side may have some commonality with other living beings in nature. Conversely the metaphysical side of mankind, such as the feelings of justice, belief, intuition, morality, love, emotion and empathy etc. can only be explained from the non-physical and spiritual perspective. Therefore, in this dimension of mankind; he/she emulates and tries to imitate as far as possible the qualities and character of God (Akhlaq Allah). Having certain intentions and goals in his/her conduct, the individual carries out his/her responsibilities, and this attribute indicates the transcendent aspect of human being.

In order to understand the modern view about human beings, the medieval perspective of mankind should be mentioned. There are three key points in Medieval Christian perspective: 1) The world is created by God and He is the greatest power in the universe, 2) Mankind has a unique position among other beings, God created man in His own image, 3) The life in the world is not final, rather it is only a beginning.

The modern view denies all of these notions. With the Darwinian Theory, mankind is deemed as part of nature and the notion of deity is denied. As a result, humankind lost their significance and thus their unique position in the universe. For this view, mankind is not a vicegerent on earth and thus he is not created in the image of God. Mankind is classified as an idealist, naturalist, rationalist or romantic in modern view. Darwin Theory has denied the notion of deity, although Darwin necessitated the existence of God to design human beings and other living beings with such fine and perfect body parts.

The postmodern view holds that it is permissible to benefit from the notion of revelation, but religion is never considered as the ultimate criteria to prove something true. In this view, mankind is part of nature and belongs to this world. This view rejects anthropocentrism. This view does not debase other beings or objects in nature while praising human beings; rather they accept nature as having independent value. (As Allah SWT has declared human beings as His Vicegerent and no entity superior to human beings has yet been discovered, it is not justified to negate this declaration).

Islamic view considers mankind as having a great potential to be perfect and contribute to justice and harmony in society. Islam does not aim to transform the human being into an angel, because God created human beings different than angels and there is wisdom in this. Islam aims to help mankind actualize his/her potential and become a perfect human (Insan al-Kāmil). The Prophet of Islam, Muhammad (SAW) as well as other prophets in history are proposed to be role models in this regard, to be imitated and emulated. Islam recognizes denouncing the worldly pleasures to a certain extent but it never ignores life, health, intellect, social conduct, happiness and inclination to worldly pleasures. The notion of denouncing worldly pleasures in Islam- is striking the balance between carnal desires and moral values.

My story

Prof Qureshi states as: I am part of this Universe. A wide difference exists between the size of myself and the Universe, observed through the Hubble Space Telescope of the world's first space-based optical telescope after American astronomer Edwin P. Hubble (1889-1953; NASA 2018). Dr. Hubble confirmed an "expanding" universe, which provided the foundation for the big-bang theory. Hubble was launched on April 24, 1990, from space shuttle Discovery (STS-31) and produced the first Image on May 20, 1990 covering Star cluster NGC 3532. A black hole (M87) and its shadow were captured in an image for the first time, a historic feat by an international network of radio telescopes called the Event Horizon Telescope (EHT) through an international collaboration (Landau 2019). The black hole weighs about 2.4 billion solar masses. Solar mass is equal to $2x10^{30}$ Kg as compared to my mass, 74 kg.

Similar to the difference between my size and the Universe, the age is also different. I may live up to 80 years while the Universe has been living for 13.8 billion years and will continue to live as long as Allah SWT wishes.

I and the Universe co-exist and influence each other. My good deeds convey blessings to the Universe and changes in the Universe affect my daily life. Allah SWT says that the Universe has been created to serve human beings and human deeds affect the health and well-being of the Universe (Al-Qur'an, 2:164; 54:9-16). Prophet Muhammad (SAW) has been sent as a blessing for the Worlds.

So the Universe has been created to serve me and all the Human beings, starting from the first man born on Earth, Adam AS till the last man on Earth before, Israfil AS, the Archangel will blow into the trumpet to signal Qiyamah, the Day of Judgment. He is one of the four Archangels, the others being Jibraeel AS, Mikhaeel AS, and Izraeel AS. I have been settled along with other fellow humans as Vicegerent of Allah SWT on Earth. I have been prevented from spreading Fasad (corruption, mischief, disorder and violence) on Earth which may lead to calamities and disorders in the Universe (Al Qur'an, 11:116).

I have been blessed by Allah SWT with a favorable environment on Earth to support my life comfortably, with a right distance from son, with orbital and axial motion of Earth, with emergence of day and night, providing me with a favorable environment to work during daytime and to sleep during nighttime. Surely, in the creation of heavens and earth, and the alternation of night and day, and the ships that sail in the sea, carrying that which benefits men, and in the water Allah sent down from the sky, then revived with it the earth after it was dead, and in every creature He has scattered on it, and in turning of winds, and in the clouds employed to serve between heaven and earth, there are signs for those who have sense (Al-Qur'an, 2:164).

I was born as a soul (my first life) along-with all other souls of the human beings from the loins of the first man Adam AS with the Commandment of Allah SWT who made them testify concerning themselves, (saying): "Am I not your Lord (Who cherishes and sustains you)?" They said: "Yea! We do testify!" (This), lest. Ye should say on the Day of Judgment: "Of this we were never mindful". After this Great Covenant, my soul fell asleep and remained so during Alam i Arwaah (the World of Souls), which was my first death. My soul is taken out during sleep and returned back when I wake up. And in no way is this present life of this world anything except a diversion and a plaything; and surely the Last Home is indeed the Eternal Life, the all-blessed life, if they know the Truth. (Al-Qur'an, 7-172; 39:42; 22:64).

At the age of four months of my fetal life, my soul was attached with my body and my material requirements were met through blood circulation of my mother connected with my body through naval blood vessels. I was enclosed in three fetal membranes and I was protected by Allah SWT from diseases and genetic/developmental abnormalities. Immune system of my mother was depressed to prevent its rejection by the body of my mother; as my body was a foreign body inside my mother's body.

An elegant description of the embryogenesis of myself, including other mammals, has been mentioned by Qur'an as: placement as a nutfah (drop) in a place of settlement, firmly fixed; conversion into an alaqah (leech like structure); change into a mudghah (chewed like lump); made out of that mudghah, izam (skeleton, bones), then clothed the bones with lahm (muscles, flesh; then caused him to grow and come in being and attain the definitive (human) form (Al Qur'an, 22:5).

My sex differentiation during embryogenesis was mentioned as transformation of alaqah into mudghah, in a rapid way completing in two days, 24 th and 26 th day post-conception. The rapid change has been expressed with the word "fa" meaning "then" and pointing at the rapid development of transformation of bi-potential gonad into either testis or ovary and relevant reproductive organs of that sex through the expression of Sry genes located on Y chromosome of the male embryo. I lived as fetus till the date of parturition, initiated through fetal cortical steroids, released due to demand for more nutrients, lack of availability of space and higher body temperature of mother, under the Commandment of Allah SWT, protecting me at all these stages, Alhamdulillah.

At my birth I was given the second life, Alam i Dunya, the Worldly Life. I could not eat, drink or speak. Allah SWT provided my innate senses to get milk and to cry if I was hungry or uncomfortable. During childhood, I was blessed by Allah SWT to be raised in a Muslim family with love from my parents and others related to me through my mother or fathers. Allah SWT advised me to be kind to my parents when they reach old age (Al-Qur'an, 46:15; 17:23-24).

My body is composed of material elements and a soul. Material requirements come from the earth and the environment and my body needs an optimum level of oxygen and humidity from the air, an optimum ambient temperature, freedom from toxic gases and elements and daily supply of food nutrients from animals, plants and water. My material needs are arranged by Archangel Michael AS as per my Rizq, provision and sustenance, allocated for me and recorded at lawh mahfuz, the Protected Tablet.

I have got numerous blessings from Allah SWT, like the Sky, Earth, fruits, grains, husk, scented plants, the seas and their treasures, mountain-like ships in the sea, and the blessings in Jannah; comprising dark green gardens, with springs, spouting, fruit and palm trees and pomegranates. good and beautiful women, fair ones reserved in pavilions, untouched before them by man or jinni, reclining on green cushions and beautiful fine carpets. Blessed is the name of your Lord, Owner of Majesty and Honor (Al Qur'an, 55:1-78).

I am being benefited with all these blessings during my worldly life and I have tried to thank Allah SWT through my daily prayers and a good interaction with my fellow beings, animals and the environment. At the same time, I realize that my deeds were not perfect, so I have been continuously asking for the pardon of Allah SWT for my deficiencies and my sins. I believe in death and ask Allah SWT to make it easy for me. That will be my second death. Archangel Israel AS will come to me to take out my soul and present it at Illiyeen, the place for blessed souls or Sijjeen, the place for bad souls. I ask Allah SWT to place my soul in Illiyeen. Amin.

Allah SWT has narrated our creation, our fear, His knowledge about us, recording of our deeds by Kiraman Katibeen, our death, our resurrection, our pushing towards the place of Judgment by an angle, handing over the record of our deeds by another angle and punishment of the non-believers (Al Qur'an, 50:16-29).

My body will be buried in Qabar with Namaz e Janaza as per Shariah and I will be asked by two angels, Al Nakeer and Al Munkir, who is my Rab, the Protector. I will say Allah SWT. I will be asked what my Din is, the religion; and I will respond, Islam. I will be shown an image, who is this? I will respond that this is Muhammad (SAW). Then my Qabar will be expanded, illuminated and a window will be opened from Jannah, in Sha Allah and I will sleep till blowing in Trumpet by Israfil AS declaring Qiyamah, the Doomsday (Tirmidi 2020). Then, I will be given life again for the third time, to face the accountability for my worldly deeds. I am confident that I will get recommendations of Prophet Muhammad (SAW), to enter Jannah and I will not be among the cursed people to be pushed to Jahannam. There I will live forever, in Sha Allah.

His Birthplace

Prof Qureshi was born on 20 March, 1959 at a rural village, Akhundan, Fazal Haq, Surani Region, District Bannu, located in the north of the district, at 6 km on Daryoba Road. adjacent to the Khost province of Afghanistan via North Waziristan. This is a typical *Pakhtoon* village with rich cultural and religious background. Prof Qureshi states: I spent the earlier parts of my life in the said rural areas, with resource constraints but a rich culture and historical background.

District Bannu is located in the central part of Khyber Pakhtunkhwa province, Pakistan, just south of the Kurram River (Encyclopedia Britannica, 2013). The nearby Akra mounds have revealed remains dating to about 300 BCE. In ancient and medieval times, the Kurram-Bannu route into the Indian subcontinent was used by invaders and colonizers from the northwest. Founded in 1848 by Lieut. (later Sir) Herbert Edwardes as a military base, the town was named Dalipnagar (1848) and then Edwardesabad (1869). In 1903 its name was changed to Bannu.

The Region is Muslim dominated, ruled by Kanishka, the founder of Peshawar in Kushan Empire during 120 to 144 AD. Once a stronghold of Buddhism, the history of the region was characterized by frequent invasions by various empires due to its geographical proximity to the Khyber Pass. Since the 9/11 attacks in the United States in 2001, the Khyber Pakhtunkhwa has been a major theater of militancy and terrorism which intensified when the Taliban began attempting to resist the foreign occupation in Afghanistan.

Bannu Town or Edwardsabad, headquarters of the District and Tehsil Bannu, North-West Frontier Province, had a population of 14,291, including cantonment and civil lines, during 1901 (Imperial Gazette of India 1909). The municipality was constituted in 1868. The municipal receipts and expenditures during the 10 years ending 1903-4, averaged Rs. 46,000. against an income of Rs. 47,000. The town had a considerable trade embracing the whole traffic in local produce of Bannu valley. The chief articles of trade were cloth, livestock, wool, cotton, tobacco and grain. Bannu possessed a dispensary and two high schools, a public library and a town hall known as Nicholson's Memorial.

Earlier history of Banuchi tribe was narrated (Thorburn 2015, 2019) as follows: Now when the abomination of idolatry had ceased in the land, it remained desolate for two hundred years, until, in the

reign of Shahab-u-d Ghori, it was peopled by a race of true believers of the tribes of Mangal and Hani. They lived in peace for many generations, until they forsook the laws of the Law of the Lord and his prophets, and withheld tithes from their Pir Sheikh Muhammad. Then the holy Pir, seeing that their ways were evil, was vexed in his heart, and called his son, and said, " Go thou to the hill called Shawal, and say to the sons of Shah Farid, Come, and ye shall inherit the land; ' " and the young man rose up, and went and said, "Come, for my father calleth you."

Then the children of Shah Farid, who was also called Shitak, were glad, for they were sore pressed at the hands of men of the tribe Wazir, and they girded up their loins, and with their wives and little ones came down from the mountains, and camped at the mouth of the pass called Tochi. Then the Mangals and Hanis feared exceedingly, and it happened unto them as unto the pigeons. When the children of Khattak also had been expelled, the Bannudzais divided the land amongst themselves by lot.

Now Bannu was the wife of Shitak, whence his descendants were called Bannudzais, and she had two sons. Kiwi, who was the father of Miri and Sami, and Surani. The share of the sons of Miri fell to the south, of the sons of Sami in the middle, and of the sons of Surani to the north and west. Now the name of the land was Daud, for there was much water; but the Bannudzais dug drains and sowed corn and Said, "Let us call this place Bannu, after our mother, for it is fruitful, even as she was." And they did so.

Then there was peace in the land for four hundred years, and the people waxed great and multiplied, and obeyed the commands of their priests. In those days holy men, hearing there was plenty in Bannu, came there from the west and the south a vast multitude; but there was room for them all.

After many generations Bannu passed from the hands of the Kings of Delhi, and became part of the kingdom of Kabul; but when the power of the king waxed faint, the leaders of the Bannudzais raised their heads, and each said in his heart, " There is no ruler in the land, lo, I shall make myself chief! " And the people were perplexed, saying in their hearts, " Whom shall we follow? " So they divided themselves into two parties, the " black " and the " white," and there was war in the land for many years.

Then the Wazirs saw there was strife and discord in Bannu, that the land was good, so they stretched their hands forth for the prey. There was sore trouble in those days, but the cup of bitterness was not yet full, for a race of infidels came from the east and harassed the land even for twenty years.

Latifyad (2020) compiled the Pakhtoon tribes in his book uploaded at Khyber.org, described the tribes of Bannu as follows: Banochis belong to Karlani branch of Pakhtoon tribes. Their grandfather was Shah Farid, also known as Shitak, whose mother’s name was Kakki who died during the birth of Shitak. Shitak has got three wives, the eldest named Bano, having two sons, Surani and Kivi. Tanrai, Dewar were sons from the second wife and Jelam and Haved from the third wife. The name of District Banno and the name of the tribe Banozai or Banosi, have been after their mother Bano, the first wife of Shitak.

Before the settlement of Banosi, the region was inhabited by Hindus and Greeks (Farid et al, 2000). The remains may be found in the form of coins, dwellings, walls paintings/carvings and forts of those times. Akra was found as clearly one of the few sites in the north-west of Pakistan that has the potential to provide information on cultural developments from 2000 BC to AD 1000. The bulk of our evidence so far relates to the first millennium BC.

We know from historical documents that three dahytiva (or provinces) of the Achaemenid Empire were located in modern day Pakistan: Gandhara, Thatagus and Hifidush (Vogelsang 1990, 94-96) and from the

outset of archaeological research in this area attempts were made to identify relevant place names mentioned in both Achaemenid and Classical sources. As early as 1863, Sir Alexander Cunningham suggested that the site of Charsadda was to be identified as ancient Pushkalavati, the Sanskrit version of the Greek name Peukelaitis, Peukelaotis or Peukala which Arrian and other ancient sources suggest was the ancient capital of Gandhara.

On the basis of these findings it is now clear that Akra holds the promise of providing unparalleled data on the issues of pre-Achaemenid and Achaemenid social and economic organization and trade. There is obvious evidence for substantial occupation dating to before the Achaemenid period. The large-scale architectural features are the remains of civic or defensive buildings. The painted pottery accounts for only 2-3% of the corpus at the Central Asian sites (Chernykh 1992, 273) accounting for at least 30% of the ceramic corpus from those levels. In April 1997, Dr M. Salim of the Quaid-i-Azam University, Islamabad and Prof Farid Khan discovered stone tools in the Ore Ghundheri Picket area on the road to Miranshah which may be Middle Palaeolithic character and so date to as early as bout BP 70,000.

Our Quraysh Family

Our family belongs to an Arab tribe Quraish (also called Quraysh, Kuraish or Koreish), the ruling tribe of Makkah at the time of the birth of the Prophet Muhammad (Encyclopedia Britannica 1998, Fig 1 - Family Tree). Our family settled at Village Akhundan, Fazal Haq Malvana, **Surani** Region, District Bannu. There were 10 main clans of Quraish, the names of some of which gained great luster through their members' status in early Islam. These included Hāshim, the clan of the Prophet himself (see Hashemite); Zuhra, that of his mother; and Taim and ʿAdī, the clans of the first and second caliphs, Abū Bakr and ʿUmar I, respectively; and Umayya, the clan of the third caliph, ʿUthmān, and his relatives, the dynasty of the Umayyad caliphs.

The Quraysh's progenitor was Fihr ibn Malik, whose full genealogy, according to traditional Arab sources, was the following (Wikipaedia 2020a): Fihr ibn Malik ibn al-Naḍr ibn Kināna ibn Khuzayma ibn Mudrika ibn Ilyās ibn Muḍar ibn Nizār ibn Maʿadd ibn ʿAdnān. Thus, Fihr belonged to the Kinana tribe and his descent is traced to Adnan, the semi-legendary father of the "northern Arabs". According to the traditional sources, Fihr led the warriors of Kinana and Khuzayma in defense of the Ka'aba, at the time a major pagan sanctuary in Makkah, against tribes from Yemen; however, the sanctuary and the privileges associated with it continued to be in the hands of the Yemeni Khuza'a tribe. The Quraysh gained their name when Qusayy ibn Kilab, a sixth-generation descendant of Fihr ibn Malik, gathered together his kinsmen and took control of the Ka'aba. Prior to this, Fihr's offspring lived in scattered, nomadic groups among their Kinana relatives.

The sanctuary village of Makkah became a major Arabian trade hub. According to Watt, by 600 CE, the leaders of Quraysh "were prosperous merchants who had obtained something like a monopoly of the trade between the Indian Ocean and East Africa on the one hand, and the Mediterranean on the other". Furthermore, the Quraysh commissioned trade caravans to Yemen in the winter and caravans to Gaza, Kut, Basra, Doha, Damascus and al-Arish in the summer. The Quraysh established networks with merchants in these Syrian cities. They also formed political or economic alliances with many of the Bedouin (nomadic Arab) tribes in the northern and central Arabian deserts to ensure the safety of their trade caravans. The Quraysh invested their revenues in building their trading ventures, and shared profits with tribal allies to translate financial fortune into significant political power in the Hejaz, western Arabia.

Peters (1994) referred to Arab's historical memory recalled Qyssayy as the "Unifier" he was, the tradition reported "the first of the Kinana who achieved ruler ship and who united his tribe the Qyraysh". The later Arabs were perfectly clear as to who was Quraysh and who was not. It is said that Quraysh were so called after one Quraysh ibn Badr of the Al Nadr branch of Kinana. Quraysh was the guide of Bano Al Nadr in their travel and was responsible for provisioning them. He had a son named Badr who dug the well at Badr and the well called Badr is named after him.

The Arab conqueror Muhammad bin Qasim conquered Sindh in 711 CE (Wikipedia 2020b). The Pakistan government's official chronology claims this as the time when the foundation of Pakistan was laid but the concept of Pakistan came in 19th century. The Early Medieval period (642–1219 CE) witnessed the spread of Islam in the region. During this period, Sufi missionaries played a pivotal role in converting a majority of the regional Buddhist and Hindu population to Islam. These developments set the stage for the rule of several successive Muslim empires in the region, including the Ghaznavid Empire (975–1187 CE), the Ghorid Kingdom, and the Delhi Sultanate (1206–1526 CE). The Lodi Dynasty, the last of the Delhi Sultanate, was replaced by the Mughal Empire (1526–1857 CE).

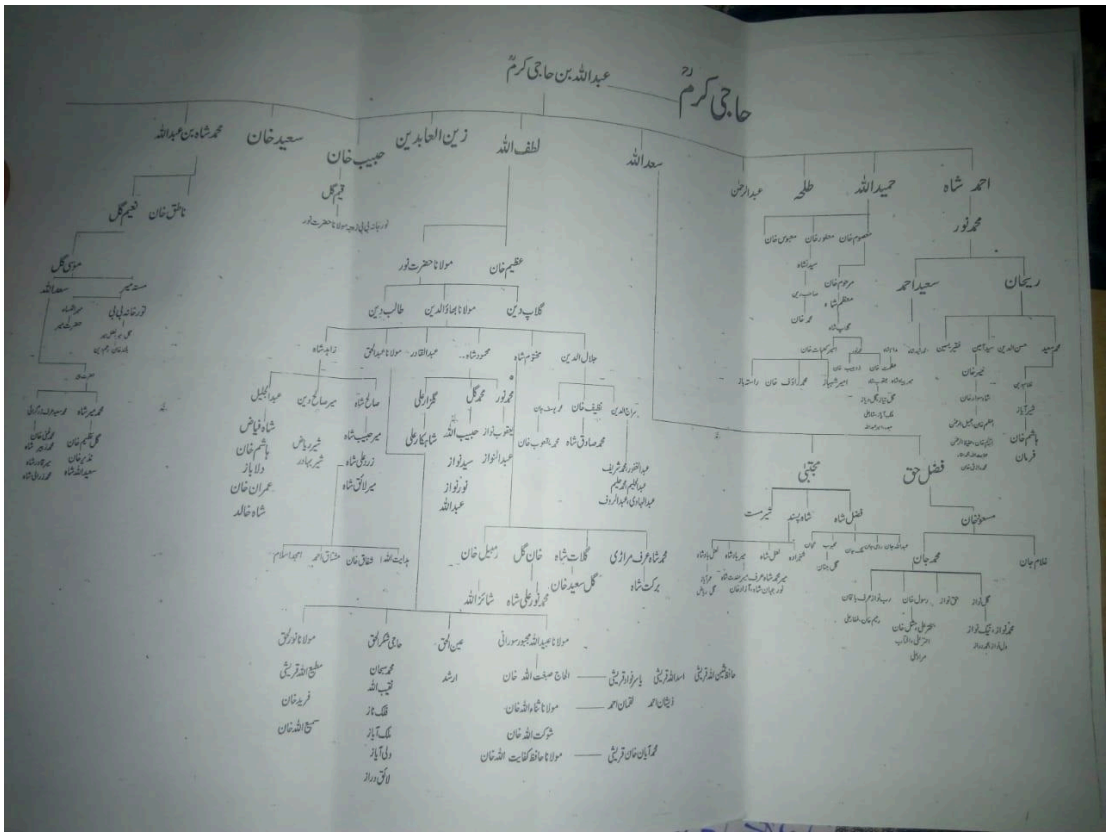


Fig.1 - Family Tree MS Qureshi

Ever since the early 1970s, the Jamaat-i-Islami (JI), has been frequently organizing 'Yaum Babul Islam' an event in which the party celebrates the conquest of Sindh by Arab commander Mohammad Bin Qasim (in the 8th century CE), explaining it as the 'advent of Islam in South Asia' (Paracha 2015). Speakers at various events also describe Qasim as the 'first Pakistani' and then trace and place the creation of Pakistan to the arrival of the Arab commander 1,300 years ago.

The Quraysh family of Bannu were highly educated, especially in Islamic studies and they vaccinated their kids in that era. Bannu District has been serving as a junction between the Afghanistan border province of Khost, and the provinces of Punjab and Balochistan, Pakistan. Hence, its language and culture was influenced by all these three regions. The land is irrigated by waters from Kurram River, originating in Afghanistan and joining the Indus River in the East. The land supports cultivation of sugarcane, maize, rice, guavas, dates, figs, pears and plums. Curcumin and jute are two industrial products marketed in Rawalpindi, Faisalabad and Karachi for preparation of medicines, clothes and packaging materials.

Settlement at Bannu

Our Quraysh family settled at Village Akhundan, Fazal Haq, Surani, Tehsil and District Bannu by Hazrat Haji Karam RA, my fifth great grandfather. He migrated from Buner, Swat via Musazai, Peshawar. He travelled for Hajj by foot from Musazai, Peshawar and returned back to Village Akhundan, Bannu. A Chagarzai Portion of Buner District has been reported as Akhun Khel (Anonymous 1983) as a religious body not belonging to any particular clan. A Chawazai or Sawazai tribe resided in this part of Surani Region, who were threatened by the surrounding tribes. Chawazai were impressed by the good character of Haji sahib and requested him to stay in the village permanently, so that the Region may become blessed. Haji sahib agreed to stay and was awarded a piece of land for his livelihood support. Haji sahib provided a piece of land to his special servant, Fazal. Family Tree of Haji Karam follows and is available online at https://www.myheritage.com/site-family-tree-772618071/qureshi.

The only son of Haji Karam was Abdullah who was married to three wives, Bakhtawara Bibi, Tyyeba Bibi and Zahida Bibi. Bakhtawara Bibi had four sons, Ahmad Shah, Hameedullah, Talha and Abdur Rahman. Zahida Bibi had three sons, Habib, Saeed and Muhammad Shah. Tyyeba Bibi had also three sons, Saadullah, Zainul Abideen and Lutfullah. Maulana Abdul Haq RA descended from the same son Lutfullah. His family tree comes as Maulana Abdul Haq RA, son of Hazrat Maulana Baha ud Din RA, son of Hazrat Maulana Hazrat Noor RA, son of Hazrat Maulana Lutfullah RA, son of Hazrat Maulana Abdullah RA, son of Hazrat Haji Karam RA.

Brothers of my grandfather Maulana Abdul Haq were Jalaluddin, Makhtum Shah, Mahmood Shah, Abdul Qadir and Maulana Zahid Shah. Families of Jalaluddin continued as Sirajuddin, Nazeef Khan and Muhammad Yousaf Jan; Makhtum Shah as Mahammad Shah (Mararhi), Gulat Shah (Gulati), Khan Gul and Rambail Khan; Mahmood Shah as Muhammad Noor, Muhammad Gul and Dr Gulzar Ali Khan; Zahid Shah as Saleh Shah, Mir Saleh Din (Zmari) and Abdul Jaleel.

Families of other sons of Haji Karam, Ahmad Shah, Hameedullah and Saadullah have settled in village Tatiwol, Fazal Haq Melvana. Fazal Haq was son of Saadullah, son of Haji Karam RA. Families of Muhammad Shah son of Abdullah RA son of Haji Karam RA have settled in Keez Kala village, comprising Muhamad Mir Shah (Gul) and Muhammad Saeed (Zargirayee).

As a religious scholar, Haji Karam was a prominent person in the region and his progeny has settled in five kotkas (sub-villages). His shrine is located at Chargul, a great graveyard of Surani Region, located on Doa stream, nearly 3 km from Akhundan. Family tree is available in Fig.1 and www.myheritage.com/qureshi.

His Grandfather

Early Life and Education



Prof Qureshi recalls as: My grandfather Maulana Abdul Haq (RA) was born between 1875 and 1885. He got primary education from his father Maulana Baha ud Din and Fiqah from Maulana Abd ur Rahim “Jan Kali Mula”. Ahadees were studied at Lakki Marwat. Further studies in Qur’an and Hadith were completed at Karbogha Sharif, a village located in a mountainous area of the union council of Hangu District, Pakistan north of tehsil Thall (Wikipedia 2020c). Karbogha's land lies between 2 opposite ranges of mountains, and the highest peak of the Southern mountain is called "Oot Sar". The word Karbogha is derived from "Kara" and "Bogh" , both words originally from the Pashto language meaning "saw" and "garden".

There has been a widespread whisper about a person named "Adam Baba" who is told to be buried in a place named "Bahira" in the Karbogha. Originally he was told to be from Swat Valley. Later his student "Sahib Mubarak" followed him and built a mosque. Then he had children from 7 wives in his life all known today in Karbogha as "Khunzada" cast. One of his grandchildren named "Mufti Mukhtyar-u-Din" has a big well known Madrassa in Karbogha today and has many students from all over Pakistan. "KARBOGHA" is known for village of Mulvies because of so many Deeni Madares are here.

Getting education at Karbogha Sharif was a great experience for Maulana Sahib. He faced difficulty in learning Qur’an and Hadith. On the day of graduation, all the students were happy, however, he was weeping. The teacher asked him that why he was worried. He replied that he could not understand what he was taught. The teacher embraced him and squeezed him emotionally with Dua to expand his mind for understanding Qur’an and Hadith. Maulana Sahib was happy and confident on his understanding of Sharia teachings and performed excellently during the graduation ceremony. On return home to Village Akhundan, Fazal Haq Malwana, he was welcome by a huge crowd near Domail, through some unknown divine call.

Teaching Qur’an and Hadith

He spent his whole life teaching Qur’an and Hadith on an almost daily basis. During his final days, he was very weak but still guided the people in the light of Qur’an and Hadith. He remembered many references from Qur’an and Hadith, to explain various issues faced by the people regarding Sharia applications in religious as well as worldly affairs.

Maulana Sahib was a simple person talking very little and not without any purpose. He had always been engaged with his students in Qur’an and Hadith, mostly adult, belonging to various regions of Khyber Pakhtunkhwa and the adjacent Afghan regions like Khost, etc. It is narrated that his students also comprised jinns. Some supernatural occurrences have also been associated with his life. He was consulted by local people for resolving prolonged disputes and complicated Shariah issues (Gazetteer 1883). He used to lead Salaat i Jumma, the Friday Prayers as Imam at Jaffar Masjid, Bannu City. And people used to meet him and seek his blessings, Dua and guidance on various religious, worldly, personal

and community matters. Prof QureshiI feels blissful for having prayed Jumma under Imamate of his grandfather when he was an intermediate student of Science at Government College Bannu.

My experience with Grandfather

Prof QureshiI remembers when he studied the blue sky in his school book, he asked his grandfather as to what the sky was? He said that the sky was very high and we couldn't see it. The blue sky that we can see and appreciate is, in fact, only air. One of his students, one day, asked him, “where were you Molvi sahib??”. He was unhappy at that time and answered, “I had climbed up to the sky!”. Later on, when he got relaxed, he told his students that the area above the surface of Earth is sky. He has climbed a tree and the tree lies in the sky above the surface of Earth. So he told, “I climbed up to the sky”.

He was a keen observer of the developments occurring with the advancement of knowledge and the introduction of new technologies in human lifestyle. During the sixties man landed on the moon. I, as a primary school student, asked my grandfather, whether it is possible that man can escape the Earth, enter the sky and land on the moon? He said yes, the real sky is too high. The moon is below the sky and man can reach it if he possesses the power.

> “O company of jinn and mankind, if you are able to pass beyond the regions of the heavens and the earth, then pass. You will not pass except by authority.” (Al Qur’an, 55:33).

The gravitational pull of Earth doesn’t allow the objects to escape, unless it is powered off to get an escape velocity. Escape velocity is the speed at which an object must travel to break free of a planet or moon's gravitational force and enter orbit (Shelley 2009). A spacecraft leaving the surface of Earth, for example, needs to be going about 11 kilometers (7 miles) per second, or over 40,000 kilometers per hour (25,000 miles per hour), to enter orbit. The Authority mentioned in the above verse probably refers to the propulsion power needed to get the escape velocity. Whenever the human being got the propulsion power to get the escape velocity, it escaped the gravitational pull of Earth and landed on the moon. Prof Qureshi says: Today, I understand the conversation I had with my grandfather fifty years back.

Religion can’t get separated from human mind. As astronauts Frank Borman, Jim Lovell and William Anders entered into lunar orbit on Dec. 24, 1968, they did a live TV broadcast, showing pictures of the Earth and the moon as seen from their spacecraft (Schratz 2019). They ended the broadcast with Anders saying, “For all the people on Earth, the crew of Apollo 8 has a message we would like to send you.” They then took turns reading from the Book of Genesis, beginning with “In the beginning God created the heavens and the earth” and concluding with “and God saw that it was good.” Borman then closed: “Good night, good luck, a Merry Christmas, and God bless all of you — all of you on the good Earth.”

Religious Authority

Prof Qureshi recalls as: During the declaration of the onset of Ramadhan Sharif or Eid al Fitr, my grandfather was the final authority to pass Shariah decree, by the moon sighting committees and the district administration. He was approached for permission and blessings by endorsed the local candidates contesting elections for provincial or national parliaments. He passed away on 21 January 1981 and his Janaza was participated by a large number of people belonging to various segments of the society. He left this World but his blessings continued through teachings and good deeds of thousands of his students and followers.

He was a person of high moral values and lived his life with piety, away from worldly glamour. Religious values were maintained by our family members and no one with shaved beard could appear before him, without hiding his face with some cloth. No one dared to smoke cigarette or listen to music in his presence. He enjoyed the highest possible respect in Bannu and the adjacent areas, especially among the elders. Respectable elders used to visit him frequently with gifts in the form of clothes, food and money. Kids were brought to him for getting his special Dua.

Religion in my family

Prof Qureshi recalls: Religious teachings of my grandfather was a continuation in sixth generation, initiated by Haji Karam RA and going through Abdullah RA, Lutfullah RA, Hazrat Noor RA and Bahauddin RA. After the sad demise of my grandfather Maulana Abdul Haq RA, the teaching continued by my elder uncle Maulana Nur ul Haq and the youngest uncle Maulana Ubaidullah. Maulana Ubaidullah continued the mission through the establishment of Jamiah Haqqaniah, which after his demise, is being supervised by Maulana Kifayatullah. My father Haji Shukurul Haq and my third uncle Mr Ainul Haq were involved in small scale trade and agricultural farming. My grandfather had four sisters, two of whom were married at Village Akhoondan and two at Village Dharma Khel. My grandmother, sister of my paternal grandfather Maulana Fazal Gul, belonged to Village Dharma Khel and my mother was his daughter and my wife (late) was his granddaughter.

Brothers of my grandfather were Haji Mahmood Shah, Haji Zahid Shah, Mr. Abdul Qadir, Mr. Makhtum Shah and Mr Jalal ud Din. My Grandfather was son of Maulana Baha Uddin, son of Hazrat Noor, son of Lutfullah, Hazrat Abdullah, son of Hazrat Haji Karam. His progeny along with his brother, are living peacefully in the village Akhundan, Fazal Haq, Surani, Bannu.

His Father



Prof Qureshi recalls: My father, Haji Shukurul Haq Qureshi (Marhoom; 1934-2003) was the second eldest son of my grandfather, Maulana Abdul Haq Surani (RA). He got informal primary education and was able to read and write in Pashto, Urdu, English and Hindi. He was taking care of our crop fields, mainly orchards of guava and loquat fruits, turmeric and jute. He used to work himself and took help of his friends and hired labor at the time of sowing or harvesting the crops. Sugarcane was also an integral crop of the farming system and the harvested crop was brought from the field to home and juice was extracted for preparation of brown sugar (gurh; Video-8, Video-9) He also maintained a small herd of goats, sheep and buffaloes.

My father was a man of principles, sacrificing his interests while keeping the benefits of others on higher priority. He worked hard from dawn to dusk, earning livelihoods from crop husbandry and small scale trade. He used to visit the crops fields or jute and turmeric markets in Torkey Bazar and Bannu city, on almost daily basis. He has had a busy life till last night. On the morning of his death his routinely hired vehicle of Liaqat Ali Khan came to pick him while he was found dead. Inna lillahi wa inna ilihi rajiwoon.

He was hard on discipline and monitored his kids growing, very strictly. He has got two wives. Prof Qureshi adds: My step mother married him but she fell ill. So, my mother was married to him. I am his eldest son followed by Naqeebullah Khan (On left in this photograph with Prof Qureshi), Falak Naz Khan, Malik Ayaz Khan, Wali Ayaz Khan (late) and Laique Daraz Khan. The last four are my step brothers, but I have never felt any difference between my own and step brothers.



As a member of tribal society, he was very sensitive to peoples' rights and conflicts between various tribes, especially the Wazirs and Banochis. He kept himself informed well of the ongoing political and social developments in the country and used Radio Pakistan, Urdu and Pashto news channels. While working in the fields, he would listen to Urdu and Pashto songs via radio and tape recorders.

We were a middle class rural family with a moderate level of income, sufficient for meeting our household expenditures. Our income source was the crops production, mainly jute, turmeric and orchards of loquats and guavas. Beyond expenditures on food and clothes, he had to bear the education expenditures of myself and my five brothers. However, the expenditures were not too high as all of us studied in government schools with nominal charges.



Types of pen

He was regular in praying five times daily, fasting during Ramadan and paying Zakat. He performed Hajj in 1985. He had a good sense of humor and used names like Betoki, Botiree, Grhambe, Lakhrhoo, Rabezhaliee, etc., for various strange persons. On return, one day he was asked by a friend to come to the mosque for prayer. He answered jokingly that he has prayed in Harmain Sharifain in Mecca and Madinah, where the reward for prayers is multiplied by 100,000 and 50,000, respectively. Another friend asked him in a joke, has he brought Islam? He answered that I have brought the mother of Islam. His friend named Islam accompanied him along with his mother during his Hajj tour. He was also regular in his midnight prayers (tahajjud).



Pen, wooden writing board and inkpot

Consequent upon completion of my DVM studies at Lahore, I was posted at the provincial department of livestock department on 7.8.1983. He used to travel from Bannu to Peshawar frequently to see me, my younger brother Laique Daraz Khan, my kids, Irfan, Sadia, Sania, Samia and Emaan and my mother. Later on my family extended at Peshawar with my wife and kids. My brother Naqeebullah Khan also got married and got kids Qudratullah Khan, Ata Ullah Khan, Naseebullah Khan, Marina and Amna. My father used to bring fruits with him from our orchards in Bannu or the market, whenever he

visited us. He had maintained a Suzuki Car 800 cc and used to provide us transportation facilities from Peshawar to Bannu and back.

The death of my father on 18th February, 2003 was a great shock to our family as he was the patron of all of us, taking care of the needs of every one of us and those in need around us. Emaan was a newborn baby of a few weeks during that period and while playing with me, she hit my eye with her finger causing congestion with frequent flow of tears for several days. A large number of people participated in Janaza (the funeral ceremony of my father) including several colleagues from Peshawar.

His Mother as she couched them

Prof Qureshi recalls: My mother, Nazara Bibi, was born during 1942 at Village Dharma Khel, Surani Region five km from my village Akhundan in the same Region. Her father's name was Maulana Fazal Gul and mother Sahiba Bibi. Her two brothers are Fazal Haleem (Late) and Muhammad Saleem. One of her sisters died during childhood. Their family also belongs to the Quraysh tribe. She was the second lady who married in my village Fazal Haq after my grandmother Bashira Bibi and she was followed by my auntie wife of Maulana Abeedullah, my sister in law, wife of Abdul Nawaz and my sister in law, wife of Sibghatullah Khan Aziz.

My mother spent her early life in Dharma Khel, a mixed population of Muslims and Hindus before the partition of the Indian Subcontinent. Dharmakhel is a peri urban village of district Bannu, with higher rates of education and employment in the public and private sector with somewhat advanced civilization. Her father initially worked as a government contractor supplying feed to the farms. He also got religious education and later on started Imamate, leading the five times prayers.

After marriage, my mother spent her life as a lady assisting her husband involved in farming and livestock keeping. They were living in a joint family system, with families of my three paternal uncles, supervised by my grandfather and grandmother. Males used to work in the crop fields, cultivating sugarcane, rice and turmeric. For heavy work hired labors were engaged through a group of men called ashar. The crops after harvesting, were brought to home to be processed by ladies. Sugarcane was harvested by males and brought to home for further processing.

The ladies would process the sugarcane further through removal of leaves, extraction of juice through bulls operated machine, heating of the juice in a big container and formation of gurh (Jaggery, brown sugar). My younger brother Naqeebullah Khan was fond of eating sugarcane, with front of his shirt stained with the juice and used to sleep near my mother who was involved in heating sugarcane juice for gurh formation. In turmeric season, the turmeric was boiled in big containers, dried and packed in jute bags marked with SKH, abbreviation of my father's name.

I remember my mother removing the leaves from the sugarcane plants as animal fodder in my grandfather's home occupied by my grandfather, grandmother and families of the four sons. Then the sugarcane was pressed at a hand operated extraction machine for extraction of juice (video-10 and video-11). My mother was sitting near the machine, feeding sugarcane to the machine for juice extraction. In the meantime, my father came home and gave my mother two books of Urdu and Pashto along with a wooden writing board (takhti), a bamboo pen (qalam) and an inkpot (dawat).

My mother would, with excitement, say to my father, I was about to ask you to bring such items for Subhan Gul, to start going to school. The next day was the first day after the weekend and I accompanied

Sher Ayaz Khan, Mir Habib Shah, Zard Ali Shah, Sher Bahadur and Noor Nawaz, my cousins, up to the school. On return, Sher Ayaz complained to my mother about me, “your son remembers everything the teacher teaches in the class. Tell him not to do so”. In the evening when my father came home, my mother told him what Sher Ayaz Khan said to her. My father would smile and say, “understanding and remembering things is a sign of intelligence and hard work and not something bad”. One day, Sher Riaz Khan threw my school bag into running water over a bridge on a stream, to stop me from going to school, but I kept on moving forward with support and motivation from my mother.

My mother loved and respected her father and mother too much. She also loved and took care of her brothers Fazal Haleem Qureshi (Late) and Muhammad Saleem Qureshi, their wives and kids. She would always be consulted in almost all sorts of decision making processes at her paternal home. She also respected her maternal uncle Ghulam Sardar and participated in almost all family events occurring at his home. She frequently visited the home of Kuka Adey, the grandmother to get her blessings as Dua and provided her with food and services. The Grandfather Sher Ali Khan was a sincere and simple person. Similarly, she retained close contacts with her relatives Sarwar Khan, Sailiey, Ghuta, Basmira and Khan Sardar at the neighborhood of her paternal home and Dilparee her relative in village Dharma Khel.

My mother loved me and my brother, Naqeebullah Khan, too much and could not sustain our separation. She was so happy while sending me and my brother to Government Primary School, Wazir Umerzai for studying up to 5th class and to Government High School, Sikandar Khel Bala for studying up to 10th class. She used to clean our clothes, prepared breakfast and our school bags and meals to be taken during school break. After passing matric examination and breaking all previous records of merit at our school, I had to leave her to pursue my intermediate studies at Government College Bannu where I was admitted in a hostel in the city. I tried to come home each weekend.

After clearing intermediate examinations, I proceeded to Lahore to pursue a Doctor of Veterinary Medicine degree program. In the meantime, my brother Naqeebullah Khan joined the Pakistan Army and was posted in various locations like Attock and Murree. My mother had to live without both of us. We tried to visit home after a fortnight or so. She had to adjust herself to the hard realities of life. She prayed for us both and awaited our arrival at home.

After completing DVM studies at Lahore, I was posted at Semen Production Unit Surezai on 7th August, 1983 and we shifted to Peshawar the next week, with a family of myself, my mother and Laique Daraz Qureshi. My mother was happy with the new arrangements and established a good relationship with the neighbors. Laique was a primary school student at Mera Surezai School and was admitted at Government High School Nanakpura Peshawar City after passing primary school examinations. I got married in 1984 and Allah SWT blessed me with Irfan. My brother Naqeebullah Khan retired from the Pakistan Army, got married and lived with us under a joint family system.

After completing MSc Hons studies at Lahore, my family shifted from Surezai to Peshawar. First we lived in some private houses and later on moved to the Officer Colony, Veterinary Research Institute, Peshawar. Here, our family increased in size with the addition of my kids Sadia, Sania, Samia and Emaan. Naqeebulalh Khan also had three sons and two daughters. My mother used to get engaged with kids and was happy in transferring religious and cultural values to them. Initiating prayers by the kids has been an important event in our family and my mother monitored such events, participated by our relatives from Bannu. My father remained mostly at Bannu and spent a few days at Peshawar with us. Services of

Naqeebullah Khan were transferred to Cattle Breeding and Dairy Farm Harichand, Charsadda and so he shifted there with family, including our mother.

My mother was a simple, down to earth, sincere and God fearing lady. Ladies usually get involved in backbiting and the cunning ones entrap others during the discussion. It leads to a deteriorated relationship between them. Alhamduillah, my mother tried to avoid backbiting as it has been declared as a major sin according to Islamic teaching.

While at Peshawar my family used to visit Harichand to see our mother fortnightly. On alternate weekends my mother along with family used to visit us at Peshawar. It was a long drive. Telephonic contact was maintained with my mother on an almost daily basis by myself, my wife and kids.

My mother, sometimes, suffered from a cough, with dyspnea like her father, which seems to be asthma, linked to genetics. In February 2015, one day she was not feeling well and I visited her at Harichand along with my family. She was not comfortable during the night and I sat beside her at her bed. She held my hand and fell asleep. In the morning we all came to Peshawar to our residence at Professor Colony, University of Agriculture Peshawar. We admitted her to the Hayatabad Medical Complex and was put on oxygen.

At 1:30 PM she asked me where Qibla was. I pointed in the direction of Qibla; she turned her face towards Qibla and prostrated. This was her last movement while being at Sajda, at the age of 71, on 19th February, 2015 when he left this World and met her Creator. May Allah SWT bless her with Jannatulfirdous, based upon her simplicity, kind heartedness, patronage and character building of youngsters, respect and services to elders, her love for Salat and Tilawat i Kalam i Pak.

His wife



Earlier life

Prof Qureshi recalls: My mother selected her niece Jamila as my (first) wife (Allah SWT be pleased with her) in the first week of her birth and took the promise of my maternal uncle Fazal Haleem Qureshi (Late). Jamila grew up with her younger brothers Sabir Khan, Safdar Khan and Fazal Karim Sayel and younger sisters Robina and Mehertaja. She was a lovely kid in the family and loved by everyone including A-Baba, her paternal uncle and my maternal uncle.

During my stay at Lahore for DVM studies, my father told my mother to ask her brother (my maternal uncle and Jamila's father) for marriage to Jamila with her son (myself). My maternal uncle agreed to the proposal. Jamila (granddaughter of Maulana Fazal Gul married to the grandson of Maulana Abdul Haq, myself) was the third generation lady to get married from the family of Maulana Fazal Gul, Village Dharmakhel, Surani, to Village Fazal Haq Malvana, Surani, after my grandmother (sister of Maulana Fazal Gul married to Maulana Abdul Haq) and my mother (daughter of Maulana Fazal Gul married to my father son of Maulana Abdul Haq).

Hisr marriage

December 22, 1984 was our wedding ceremony, with the longest and coldest night of the year. As per tradition, the wedding lunch (Walima) was served to people from five settlements of Fazal Haq Village. NIkah was managed according to Shariah principles by my paternal uncle Maulana Nurul Haq Qureshi with a Haq Mahr (dowry or gift) of 20 tola (233.2 grams) gold.

Both me and my wife belonged to a rural background with moderate income levels. It was not difficult for us to settle at Semen Production Unit, Livestock Breeding Station, Mera Surezai, 23 km away from Peshawar city, having limited residential facilities. She managed her house perfectly, ma Sha Allah and took care of the farm employees and the neighboring village people. During weekends, we used to visit to get essential groceries and visit various places.

My wife respected her parents, grandparents and in-laws and served them to the best of her capacity. She always kept my wishes, desires and preferences supreme over others, while managing domestic affairs. She never asked for something beyond my affordability. She was fond of flowers and grew beautiful flowers in the pots as well as in flowering beds on the ground. We got spacious official bungalows at Mera Surezai during farm service, at Veterinary Research Institute during research service and at IDS Colony during agricultural university service. She maintained the bungalows with good furniture, kitchenware and flowers both natural and artificial. For about 10 years we had to live in 9 privately-rented houses, where the self-respect of the occupants got damaged and she felt it badly, as a sensitive and respected lady.

At Surezai, we used to receive official delegations from within the country and abroad and my wife managed the guests gracefully. She cooked the meals herself with the help of my mother and considered the taste of the guests. Visitors from our families in Bannu used to visit us frequently and spent time with us happily.

After shifting to Peshawar, we got an enhanced number of our family visits from Bannu, who mostly visited Peshawar in connection with some health treatment, business, education, etc. My wife treated them well and we had a good impression in our home town.

His kids

Irfan's prayer initiation ceremony was a wonderful event, with a good participation from my colleagues and their families in the livestock department and guests from Village Fazal Haq and Village Dharma Khel, the birth-places of myself and my wife, respectively. Khatmul Qur'an was held on the occasion and Hafiz Qari Abdul Haleem, my cousin, led the blissful ceremony. It was a great day for me and my wife and we wished our kids to be a source of blessing for us both in this World and the Hereafter.

The kids were growing well, ma Sha Allah. Forward High School was selected for primary studies of Irfan, Sadia, Sania and Samia. Laique Daraz Qureshi used to facilitate their transportation via a motor cycle, jointly, with their bags hanging on both sides. My wife prepared foods and bags of my kids early in the morning and one hour before the onset of school timing, the school bus reached our house-gate, for transportation of the kids to the school.

After graduating in telecom engineering from NUST Peshawar in 2012, Irfan, my eldest son was admitted for postgraduate studies at Islamabad and then at Institute of Management Sciences, University of

Peshawar. He took over as President Dairy Science Park (Society Profile 2015; Business Recorder 2016). Establishing and managing Dairy Science Park was a great battle against the status quo with heavy tasks performed by my wife, myself, my kids and associated faculty members and students. I and my wife had selected two targets for our expected daughter and sons in law, a respectable family background and good education. Irfan's mother selected Samina to marry him and the proposal was discussed with the parents of Samina, MS Economics. The marriage ceremony was held on 8 October, 2015. Samina will, hopefully, complete her PhD in Economics soon and has joined Peshawar University as Lecturer Economics at Social Works Department.

It was a great day in the life of my wife, participated by a large number of people from the University of Agriculture Peshawar, Livestock Department KP, Village Fazal Haq Malvana, Village Dharma Khel, Village Shahbaz Kala, etc. They have got a lovely daughter Manha Gul followed by Muhammad Zalaan Qureshi, adding another male member to our family after Irfan. My wife was worried about the job and future career of Irfan as he was too choosy in career development. However, he has established an online marketing company in the UK and is happy with its progress. She was happy with the good character and behavior of Irfan.

Sadia was an angry baby. She accompanied Irfan, Sania and Samia in completing earlier education from Forward High School and joined FG Degree College for FA and Peshawar University for BA studies. She was interested in religious studies and studied Qiraat ul Qur'an ul Majeed with Tajweed and Translation of Qur'an ul Majeed at Mardrassa tul Banaat Taleem ul Islam, Professor Colony, Agricultural University, Peshawar. She completed her MA in Islamyat and Arabic and M Phil in Arabic from Sheikh Zayed Islamic Center, Peshawar University. She has got a good number of citations for her impact factored research paper titled, "A review of halal food with special reference to meat and its trade potential". He joined Matta High School, Swat as Secondary School Teacher (SST) after marrying Dr Shah Murad Khan. Her mother was worried about her life in Swat as a mountainous region, but was happy with the good behavior of her in-laws and other relatives. She has got a lovely daughter, Zunaira Gul followed by Barira Gul. They had a premature baby Gul Warena, dying during first week of her life.

As an elder sister Sadia was boss of Sania, Samia and Emaan. She has been taking care of her mother, paternal and maternal grandmothers and myself with her best capacity. She always remained with her grandmothers whenever they visited our home or we visited them. She took care of her foods, medicines and other needs and got so many Duas from them.

My wife got a severe illness after the birth of Sania who was, therefore, taken care of by her grandmother. Sania performed well in her studies. She selected my field, veterinary medicine, for her graduate studies with the intention to assist me in my assignments. She got a DVM degree in 2016 and joined M Phil Pathology. She got appointed as Research Officer at Veterinary Research Institute Peshawar. Several marriage proposals came to us for Sania when her mother was alive. However, she got married to Eng. Aemal Khan on the first death anniversary of her mother. They had a child, Hanzala Ahmad Shah.

Samia, our bold daughter, was sent to school at comparatively older age, to get self confidence among class-fellows. She was physically weak during childhood with substandard weight as her mother was sick after birth of Sania. After graduating in electrical engineering from the University of Engineering and Technology, Peshawar, she got admission at US-Pak Center for Advanced Studies in Energy, UET Peshawar. She proceeded to Arizona State University, USA for research on solar energy for a period of

four months. She married to Engr Zeeshan Saeed Shah and got two kids, Arham Saeed Shah and Rehab Saeed Shah (a premature baby).

Illness and tragic demise of Jamila

In the meanwhile, she got news of her mother being admitted at Rahman Medical Institute Peshawar for treating her critical health condition. I broke the news through a telephonic call first with her training coordinator Ahmad Suhail NUST Rawalpindi. Then I requested her coordinator at UET Peshawar, Engr Ammad, to approach the US counterparts to allow Samia to visit Peshawar to see her ailing mother. Engr Aammad told me that the visa issued to Samia is only for one trip and if she returns back to Pakistan, she will not be able to get another visa to complete her studies in the USA. So, it is better for Sania to stay in the USA and complete her studies.

Engr Ammad contacted her supervisor and classmates in the USA and shared the news with them. They took care of Samia and shared the hard moments with her through prayers and Khatmul Qur'an. I and my family members talked with Sania and suggested her to stay there to complete her studies and pray for her mother. As her mother was unconscious and even if Samia had come to see her in the hospital, she would not have recognized her. But prayers (Dua) can reach her from anywhere. Samia agreed to stay at USA to complete her studies and pray for her mother.

Her mother, unconscious at Rahman Medical Institute Peshawar, after her treatment in Hayatabad Medical Complex for three days for liver damage due to Hepatitis-C viral infection. Here she was placed on a ventilator under intensive care of various specialists and laboratory investigations. Our relatives and family friends from Swat, Peshawar and Bannu visited the hospital and prayed for her recovery. She died within three days at Rahman Medical Institute, on 7th February, 2019. Inna lillahi wa inna ilihi rajiwoon.

Our house was under construction at Regi Model Town Peshawar and she used to accompany me, to visit the construction site. The structure of the building was complete and the entrance gate was ready for installation when my wife passed away. At my request, our family agreed to bury her in the graveyard of Zone-3, Regi Model Town Peshawar, where our house is located, was under construction. Previously, our deceased family members used to be buried in Chargul, the graveyard of Surani Region, including our village Fazal Haq Melvana.

February 7 was the night of Friday and her Janaza Prayers were led by Imam Sahib, IDS Colony, University of Agriculture Peshawar. During the evening my brother Naqeebullah Khan and my maternal uncle/ father in law Fazal Haleem Qureshi (Late) attended her Qabar (grave) with Tilawat I Kalam I Pak, to hand over her to the Friday Night, as a blessing for her soul. On 14 August he visited our home and recited Surah Yaseen on Qabar of Jamila. One 2 September, 2023 he passed away.

Samia continued her studies and got a certificate of distinction for better performance at Arizona State University. She came back home on the second day of the holy month of Ramadan in 2019.

Excellent disposal of responsibilities

Prof Qureshi writes: My wife disposed of her responsibilities in an excellent manner. As in charge of domestic affairs, she maintained the budget. During our stay at Semen Production Unit Mera Surezai, our expenditures were not too much and some savings were made due to lower prices of household and kitchen items. At Peshawar our kids were school going and expenditures went on increasing and the

salary hardly was sufficient for a whole month. At University the salary was somewhat higher and we saved sufficient money to purchase two plots. One of the plots was selected for construction of our house. My wife had been trying her best to help the needy people wherever possible.

She took care of her kids in character building while I was busy with my official and professional assignments. Alhamdulillah, I am satisfied with the character and behavior of my son and four daughters. We have got no complaints about the character of Irfan and his sisters. My daughters are taking care of their honor and maintaining their piety and Hijab/Niqab while studying at universities under a co-educational system and working at offices.

My wife and daughter Sadia accompanied me in performing Hajj during 2014. That was an excellent religious and international experience. We stayed at Azizyah in Mecca, a few km from Kaaba Sharif. At Madina, we stayed in an adjacent hotel. Prolonged traveling by foot while performing the Hajj activities, caused blisters on the foot of my wife. Sadia took care of me and her mother during the whole period of 42 days. She, being fluent in Arabic language, helped us in communication with the people at Haramain Sharifain and market places.

During my official and professional tours within the country, my wife used to accompany me where we stayed at university/government rest houses or hotels. Our last visit was to Lahore for attending The 38th All Pakistan Science Conference on "Energy Crises and their Solutions In Pakistan", organized by the Pakistan Association for the Advancement of Science, Lahore in Collaboration with the College of Earth and Environmental Sciences, University of the Punjab, Lahore on December 10-11, 2018. We attended the international event, sitting in the front row and she was welcomed by senior scientists of international repute. She felt tired during the tour and hesitated to walk for a prolonged duration. We noted her color blackening due to infection with hepatitis C virus, which, however, was diagnosed at a much later stage.

Symbols of being forgiven by Allah SWT

He adds: My beloved wife Jamila Subhan Qureshi was forgiven by Allah SWT, in Sha Allah, as evident from several symbols including: i) She died before death of her husband; ii) She died of abdominal pain and; iii) She died while her husband was pleased with her. We both used to recite Darood Sharif jointly. During her final moments, I asked her to recite Darood Sharif with me. She told me that her tongue is dry and she can't move it to recite Darood Sharif. However, she said that she was reciting Darood Sharif within her heart. I have seen her reciting Qur'an Sharif; showing humbleness in her interaction with the poor people and she was helpful to all people. May Allah SWT bless her with Jannatulfirdous. Amin.

The great price paid by my family

My wife had been diffusing my worries and concerns on resistance against our mission coming from the provincial government and the university administration. To undo the successes achieved under the Mission, the Vice Chancellor University of Agriculture Peshawar, Prof Zahoor Swati ordered termination of DSP and Prof Noor Pao Khan withheld my monthly salary for seven months. It caused severe stress and strains to my family. My wife Jamila Subhan Qureshi faced hardships in meeting the domestic expenses. She was unable to sustain the situation and passed away on 7 February, 2019 as Martyr of the DSP Mission. Inna lillahi wa inna ilihi rajiwoon.

Arrival of Shohrat

He adds: Shohrat came into my empty life as my wife on 25th December, 2020, after the sad demise of Jamila Subhan Qureshi and a prolonged period of two years, a very painful period for me and my kids. The vacuum was very hard to fill. As my life partner for 34 years, she shaped up my lifestyle and we became used to each other. We shared all the pleasures and hardships during this period. We raised our kids with love and care and she took care of their foods, clothes, health and hygiene during the day and night. We all were good friends within an ideal Muslim family. She prayed five times daily and recited the Holy Quran. We used to recite Darood Sharif jointly and at the time of her departure from this World, I asked her whether she was reciting Darood Sharif. She told me that I may keep on reciting while she is reciting in heart and can not move her tongue to recite orally.

The sudden departure of Jamila from our family created a huge gap. All the family members remembered her. I suffered from various types of sickness, physical as well as mental. The kids faced similar loneliness. They were worried about each other as well as about me. The kids decided to bring Shohrat to our home as their new mother in consultation with my brother, my paternal uncle (Jamila's father) and Irfan's father in law. The gap was filled partially with the grace of Almighty. As a practicing Muslim her arrival to our family the schedules of our five times praying, recitation from the Holy Qur'an, etc, got improved.

Maulana Abidullah Majboor Surani and the Quraysh Family Mission



Maulana Abidullah Majboor Surani was a famous religious and literary scholar from Surani Region Bannu. Abidullah is his name, added with "Majboor Surani" his literary title as a Pashto and Urdu poet.

He was born on 6th January, 1945 at Village Akhundan, Fazal Haq Melvana, Surani Region, Bannu. He was interested in literature since early age. He used to attend meetings and gatherings of literary societies and published articles and poems in popular newspapers.

Besides formal school education, he was lucky to have completed religious studies also. Initial Islamic education was obtained from his father Maulana Abdul Haq RA. Mantaq, Saraf, Naho, Aqaid and Tafaseer ul Qur'an were studied at Miraj ul Uloom Bannu. For further studies he stayed at Jamiah Haqqaniah, Akorha Khattak, Nowshera. Daura I Hadees was completed at Jamiah Ashrafiah, Lahore. Tirmizee Sharif was taught to him by Maulana Rasool Khan RA. Bukhari Sharif was taught by Maulana Muhammad Idrees Kandelwee. Abu Daud Sharif was taught by Maulana Jamil ur Rahman Thanwi and Muslim Sharif by Maulana Abdur Rahman RA. After completing Islamic education during 1968, he started teaching Islamic studies in his own village Akhundan.

Maulana Sahib was blessed by Allah SWT with four sons namely, Sibghatullah Aziz and Maulana Sanaullah, working in the Education Department; Shaukatullah Khan in Deputy Commissioner office and Maulana Kifatatullah Khan in Frontier Constabulary. They are engaged in social services in the region.

Maulana Sahib wrote several books including: Da Tareekh I Pak yo so panrhey (A few pages of Pakistan's Movement history) 1971; Da Bannu Adab (The Bannu Literature, Tazkirah, Narration) 1971; Zulfey au Rukhsar (Hairs and the Cheeks, Pashto poetry) 1975; Da Islam Muashi Nizam (Islamic Economic System) 1978; Da Aqedat Gulona (The flowers of salutation, a collection of poetry in praise of Prophet

Muhammad (SAW)) 1999; Rnrha Laar (the bright path, critical review) 2003; Da Sparlee Yadoona (memories of the spring, Pashtu poetry) 2007; Da Bannu Adab, second edition 2010; Nmar pa goota na pategee (the sun cannot be hidden by a finger) 2017; Da Ishtirakyat yo so zaland aksoona (a few bright aspects of socialism) not published; Hazrat Maulana Abdul Haq, not published; Khatoot I Majboor (letters of Majboor) unpublished; Pashto Adab pa Landai key, unpublished.

Maulana Sahib passed away on 30 August, 2014. His Salat i Janaza was led by Mufti Mukhtar ud Din Shah, his Pir and Murshid (Karbogha Sharif 2020), participated by thousands of people, which was a salutation to his religious, literary and social services by the people of the region. May Allah SWT bless his soul with eternal peace.

Jamiah Haqqaniah Surani, established by him, is being run by Sibghatullah Khan Aziz, his elder son, as patron. Sibghatullah Khan has got religious as well as formal education. He is serving the provincial education department as a teacher. He is engaged in Pashto poetry covering Ghazal, Nazam and Nasar and likes Ghazal as a favorite item.

Mr Matiullah Khan

Mr. Matiullah Khan completed his education and joined the Civil Service of Pakistan, after passing the Central Superior Service (CSS) examination. Beyond his civil service, he has been a poet of Pashto language and wrote several books like Armanoona (Pashto poetry, 1964), Milli Sandarey (Patriotic songs, 1966), *Rambail Chambail* (Poetry, 1978). His books were included in the curriculum of Pashto Language taught at the Secondary, Intermediate and degree levels in the Khyber Pakhtunkhwa province of Pakistan. He was an active member of the Pashto Literary Societies at Bannu and Islamabad. His work was presented at Radio Pakistan and Pakistan Television and sung by local poets of international standing.

He was born on 6 February, 1945. He got MA Economics from the University of Peshawar in 1966 and MA Economics and Social Studies from the University of Manchester UK in 1982. He worked as Lecturer of Economics at Government College Nowshera during 1969 and Research Scholar at the Economics Department of the University of Peshawar from 1967 to 1969. He entered civil service after passing the Central Superior Service (CSS) Examination. He joined civil service as Section Officer at States and Frontier Regions, Government of Pakistan on 3 November, 1969 and was promoted as Deputy Secretary, Additional Secretary and Senior Additional Secretary in 1982, 1988 and 2000 at Narcotic Control Division and Ministry of Health, respectively.

He worked at Economic Development of Federally Administered Tribal Areas (FATA) and Relief Assistance for Afghan Refugees. He also remained at Defense Production Div/Chief Martial Law Administrator/Prime Minister Secretariat.

He visited 22 countries in various regions of the world in connection with his official assignments. He led the Pakistani delegation to the USA for negotiating the income generation project for Afghan Refugees with the World Bank. He led a Pakistani delegation to Turkey for attending the second meeting of ECO on Drugs Control. He attended high level consultation on UN country response to AIDS urgent Action for an intensified and urgent approach. He attended a workshop in Japan on partnership issues in the social sector arranged by the Asian Development Bank. In another visit to Japan he attended a tender opening for expanded immunization against neonatal tetanus.



Mr Matiullah Khan (at Center; 1945-2022) with fellow Pashto writers, Sardar Yousafzai, Iqbal Hussain Afkar, Mim Raw Shafaq, Khursheed Ibn i Labeed and Raheem Khan Mahrooh at Writers House , Academy of Letters Islamabad, after condolence reference in the memory of Ghazi Sial (Late).

Quality of services

For almost a decade (1959-70), the academic community presented bureaucracy in developing countries as an engine of growth, development and an agent of change (Shafqat 1999). Bureaucracy in Pakistan provided a lead and received laudatory comments for its role in initiating economic development and political stability (Huntington 1968). By the late 1960 that witnessed popular protests and agitation against the authoritarian and repressive role of government, the opposition political parties and a segment of the print media started portraying the bureaucracy as an instrument of oppression. In the early 1980s, the World Bank studies began casting aspersions on bureaucracy's ability to promote order and development in the Third World.

To arrest the process of decay in the bureaucratic institution and to make a turnaround, a partnership among professionals, bureaucrats and academia, is a desirable goal for bringing an environment and framework for reforms. To bring about an attitudinal change and improve the skills of civil servants, strengthening of training institutions is must. Devolution of powers in the districts and redefining power structure of the federal secretariat is essential. Political leadership and bureaucracy need to develop a transparent and effective partnership for promoting public interest and ensuring humane governance.

The impression that the bureaucracy is reluctant to discharge its responsibilities because of the fear of various accountability processes has been confirmed in an authoritative study that has made the administration's fine-tuning a priority task (Rehman 2019). The study, titled Bureaucratic Decision-Making Amid Multiple Accountability, has been done by senior administrators Shahid Raheem Sheikh and Saifullah Khalid, for the National Institute of Public Policy, of the National School of Public Policy at Lahore, and issued as an NIPP policy paper.

The study is based on 610 full responses, from 721 civil servants in BPS 17-22. Out of the 581,240 civil servants on federal government posts 95.02% are in BPS 1-16 and only 4.98% are in BPS 17-22. These

officers hold positions at crucial decision- making levels. Of the respondents, 49.1% are in BPS 17-18 and 49.3% in BPS 19-20. While 13.5pc of them have service experience of between three and five years and 21.9% of 13-17 years, a much higher proportion (61.5%) has been in service for more than 17 years.

The respondents were asked for their views on the current state of bureaucratic indecision and what their opinions were regarding the four factors that are contributing to indecision. The respondents' replies deserve serious attention.

About the public perception of their indecisiveness, a majority of the civil servants say that although they are working hard and are competent enough to solve complex problems, (a) the bureaucracy is not taking decisions, (b) the bureaucracy is avoiding responsibility, (c) the bureaucracy is not accessible to the public, (d) the bureaucracy lacks a problem-solving approach, and (e) the bureaucracy gives preference to personal interests over those of the public.

It is very difficult for honest, competent and hard-working bureaucrats, like Matiullah Khan, to deliver in public interests. However, he resisted any unfair pressures from within the bureaucratic network and from outside. As a result, he could not get support from the powerful elite, but he got the confidence of honest supervisors and international donors. He served the nation to the best of his ability. Although he could not accumulate wealth and popularity among the elite class, he lived a happy and peaceful life in his home at an rather unattractive sector of the federal capital Islamabad and left this temporary world to meet the Creator, on 16 September, 2022.

Dr Gulzar Ali Khan



Dr Gulzar Ali Khan, my uncle and childhood friend who is four years older than me, has been a source of motivation for my family, visualized as a role model for my future career, by my mother. He was born in the house of Haji Mahmood Shah, brother of my grandfather, on 6 May 1955. He was still a kid when his parents passed away. He was then brought up by his elder brother Muhammad Noor. He gave him a father-like care and paid his utmost attention to his education.

Gulzar Ali Khan got his early education from Government Primary School No. 6, Bannu city and secondary education from Government High School No. 1, Bannu. He passed his matriculation examination from the Board of Intermediate and Secondary Education, Peshawar (BISEP) in 1971. He attended Government Degree College No. 1, Bannu and passed his intermediate pre-engineering examination from BISEP in 1973. Continuing his uphill education journey he received his B.Sc. and M.Sc. degrees both in mathematics from the Gomal University, Dera Ismail Khan in 1975 and 1977, respectively. He was also decorated with the Gold Medal for securing First Class First position in M.Sc. examinations.

To support himself and his family he then joined the Directorate of Energy Resources, Ministry of Petroleum and Natural Resources, Government of Pakistan, Islamabad as a basic level officer and worked there from 1979 to 1980.

In 1980, he was granted the prestigious Quaid-e-Azam Award by the Ministry of Education, Government of Pakistan, Islamabad in recognition of his academic excellence, enabling him to carry out his Ph.D. studies abroad. He therefore proceeded to the United Kingdom for higher studies in 1980.

Gulzar Ali Khan received his M.S. degree from the University of Leeds, U.K. in 1981 and Ph.D. degree from the University of Birmingham, U.K. in 1986 in mathematics. Soon after his return to Pakistan, Dr. Gulzar Ali Khan joined the Department of Mathematics, Gomal University, Dera Ismail Khan as an Assistant Professor in 1986. He was also assigned the duty of Head of the Department. He served the Department till 2001. During this period, he assisted the university administration in different capacities to the best of his abilities. His efforts were graciously commended by the university authorities in writings.

He joined the Department of Mathematics, University of Peshawar in 2001 as an Associate Professor and was subsequently elevated to the position of Professor in 2005. Dr. Gulzar Ali Khan was also appointed as Chairman of the Department twice for periods 2004-2007 and 2010-2014. The Chancellor of the university was pleased to appoint him as Dean of the Faculty of Numerical and Physical Sciences in 2013 till his retirement in 2015. In addition to his own faculty, he was also assigned the charge of the Faculty of Life and Environmental Sciences.

While at the University, he was bestowed upon the trust to act as convener/member of almost all the advisory and disciplinary committees of the university. He also discharged his function as convener/member of various statutory bodies of the university including Board of Studies, Board of Faculties, Academic Council, Selection Board, Syndicate and the Senate. He has been part of the academic bodies, selection boards of other universities, Khyber Pakhtunkhwa Public Service Commission and Federal Public Service Commission in their academic as well as selection process. During his stay at the university he was also entrusted with the duty of acting Vice Chancellor.

Afterwards he worked at Abasyn University, Peshawar from 01-10-2015 to 31-03-2016. At present, he is working as a Professor of Mathematics at the Qurtuba University of Science and Information Technology (QUSIT), Peshawar, Pakistan, w.e.f. 01-04-2016.

Up till now he has supervised three Ph.D. and twenty-seven M.S./M.Phil. scholars and examined a large number of BS, MS/M.Phil. and Ph.D. theses/candidates. His areas of research include Numerical Ranges, Norms of Derivations, Topology, Image Processing, General Relativity and Teleparallel Theories. He has published a number of research papers in national and International journals of repute and has been a referee of some national and international research journals in the field. In addition to this he has written three text books, published by the Khyber Pakhtunkhwa Textbook Board, Peshawar.

Being a member of the Provincial TextBooks Review Committee as well as Federal Textbooks Review Committees he has positively contributed by enhancing the standard of education right from Grade-I to grade-XII in Khyber Pakhtunkhwa in particular and the country in general. Keeping in view his contribution to science and literature, he was awarded Special Science and Technology Allowance by the Higher Education Commission, Islamabad in 2001-2002 and 2002-2003.

He has been to many countries including the UK, the Netherlands, Italy, Turkey, Kuwait, Dubai and Qatar in connection with his academic tasks. He remained an Associate of the Abdus Salam International Center for Theoretical Physic (ICTP), Trieste, Miramare, Italy and published some of his research work

partially supported by the ICTP. More recently, he visited Italy on behalf of QUSIT, Peshawar in 2018 to participate in research activities organized by the ICTP.

Maintaining quality standards

In a clear violation of rules and regulations, the University of Peshawar (UoP) awarded a degree to Pakistan Tehreek-e-Insaaf (Ruling party PTI) MNA and Federal Minister for Communication, Murad Saeed. The PTI leader had allegedly sat, and passed, three exams in just half-an-hour. UoP Vice-Chancellor (VC) Dr Muhammad Asif Khan bypassed all relevant authorities and the varsity's powerful syndicate and issued the degree in the middle of summer vacations (Zia 2018). An inquiry committee headed by the Dean of Numerical and Physical Sciences, Dr Gulzar Khan, investigated the matter and recommended cancellation of the degree (Sirajuddin 2015).

As member of purchase committees and other high powered committees, Dr Gulzar had to face pressure from powerful individuals and groups to favor their unfair decisions, however, he never bowed before such pressures and used to make decisions fairly and purely on merit.

Dr. Gulzar Ali Khan, considering education as the mission of his life, is still actively involved in teaching and research, after his retirement from services at the University of Peshawar.

8. His early Life, Life Motto, Implementation and Resistance faced

His Earlier Life

Prof QureshiI still recalls his feelings on the day before joining school in 1965, the year of the Pakistan-India War, with total black out at night and a high level of excitement among the people, especially the tribal elders for defense of our beloved homeland Pakistan.

He was sitting with his mother engaged in a sugarcane extraction machine called *chaghana* in the local language, driven by two bullocks. She had higher regards for higher education as previously Mr. Matiullah Khan (cousin of Prof Qureshi) and his uncle Dr Gulzar Ali Khan had completed higher education in economics and mathematics, respectively and worked as public servants with visible contribution in the respective fields. His mother desired a successful and respectable career for himself.

Realizing his Life Motto

Prof Qureshi's mother has been raising him and his brother Naqeebullah Khan in her close supervision. She used to thank Allah SWT for what they have got and was patient on the hard realities of life in that primitive society. She worked hard in managing the agricultural produce at home and he assisted her in disposing of her job. She respected her elders, her father in law and his grandfather Maulana Abdul Haq RA, her father Maulana Fazal Hakeem, her elder brother in law Maulana Nur ul Haq Qureshi and others.

She would pray to Allah SWT for help whenever some difficulty would call on her. She frequently recited Kalma I Tayyeba, La Ilaha Illallah Muhammad ur Rasulullah. She was punctual in her prayers and helped the poors through sadqa. She used to pray for ending her life with Emaan (faith) and to be given in the hands of prophet Muhammad (SAW) after death. She was God-fearing and clean hearted, having no hate, even with her enemies. Prof Qureshi and Naqibullah Khan inherited these traits from their mother and continued to follow the same. She advised them to be a source of relief for the needy ones.

Prof Qureshi's father trusted in Allah SWT and never inclined to any financial benefits through unfair means. He worked hard in the agricultural crops fields and was engaged in small scale trade. The income was sufficient to maintain an appropriate lifestyle for our family members, compatible with that period. Prof Qureshi inherited the trust and hard work from his father.

His grandfather Maulana Abdul Haq RA has been a religious scholar with deep understanding of the realities of life and relationship between man and his Creator, the Almighty Allah SWT. He was competent to explain the scientific developments under religious perspective while most of the religious scholars of that time were against formal education and did not believe in the scientific discoveries. Having been raised under supervision of his grandfather and other elders, Prof Qureshi understood the importance of religion in guiding us towards the ultimate realities of life.

His cousin Mr. Matiullah Khan was the first person in our family, getting higher education and join the civil service. He was a competent and honest officer and maintained his moral and financial integrity while interacting with his colleagues and powerful persons. He was not liked by the people in our village because they failed to be given illegal favor from his official status. Prof Qureshi followed in his footsteps

during his career, living a hard life, but full of satisfaction and good wishes from his students and their parents.

His uncle Dr Gulzar Ali Khan, is a few years older than me and he worked hard in studies at school, college and universities. Despite meager resources he continued his journey through educational institutions and joined university service. He maintained quality in his teaching and honesty/competency in disposing of his administrative duties. His office was attacked by a powerful politician, whom he had refused an illegal academic favor. His coaching helped Prof Qureshi in developing his working style as a teacher.

Let's mention the names of Prof Qureshi's first primary school teachers shaping up his lifestyle, Zorh Ustajee (old teacher), Chashmey Ustajee (teacher with glasses), Mirshahzad Master and Sherin Ustajee; his high school teachers, Mr Ataullah Khan Sr, Mr Ataullah Khan Jr, Syed Ali Master, Dost Ali Khan Master, Ismaeel Shah Master, Qamar Zaman Master and Zarali Master; his intermediate class teachers, Mr Aftab Jahan Zoology, Mr Nawab Ali Khan Botany, Mr Inamullah English and Mr Shahab ud Din Chemistry; his DVM teachers Prof Manzoor Ahmad, Prof Muhammad Irfan, Prof Faqir Hussain Saga, Prof Mubashir Saeed, Prof Mubashir Saeed Mian, Prof Arshad, Prof Muhammad Nawaz, Prof Yaqoob Malik;his MSc Hons teachers Dr Rashid Ahmad Choudhry (Late), Dr Imtiaz Hussain (Late) and his PhD teachers Prof Alauddin, Prof Ch Shaukat Ali; Prof Muhammad Zaman, Prof Hafiz Abdus Samad, Prof Nazir Ahmad and Prof Laeeq Akbar Lodhi. All these teachers contributed in building his personality with varying levels, in addition to enhancing his academic knowledge and skills in the relevant fields.

Role of Meem Sheen

While studying DVM (Doctor of Veterinary Medicine) at the College of Veterinary Science Lahore (currently upgraded to the University of Veterinary and Animal Sciences (UVAS), one day Prof Qureshi was praying at Nasir Bagh, near the College. A man calling himself Meem Sheen (Mian Muhammad Shafi), asked him to lead the prayers as Imam. First, he hesitated to accept the offer and to lead a person very senior to him, but then agreed to lead the prayer with a senior person behind.

After the prayers he told Prof Qureshi, "My son, remember that one day you will die. You will need permission to enter the Jannat, the paradise. Prophet Muhammad (SAW) standing near Hauz I Kausar, will be authorized to grant permission to anyone for entering Jannah. You must prepare a gift to present to the Prophet Muhammad (SAW) at Hauz I Kausar." From that day onward, Prof Qureshi became restless and wanted to prepare a gift to present to Prophet Muhammad (SAW). At last he recognized the gift as Dairy Science Park, the motto of his life to help the Ummah from the state of socioeconomic crisis to a status of dignity in the community of nations.

Meem Sheen, worked for a daily newspaper Tribune and later joined Civil & Military Gazette as reported by Aleemi (2014) in The News Sunday, Dialogue.

Mrs Surraya P Mirza, Lahore mentions Meem Sheen in her article published in the daily Dawn (2002) as "when I was working as a lecturer in English in Islamia College for Women, Cooper Road, Lahore; Meem Sheen and Akhtar Mirza were colleagues working for the Pakistan Times, an English language newspaper published by Progressive Papers Ltd financed by the late Mian Iftikharuddin.

Wikiwand (2020) refers to Model Town Lahore as follows. Many architects, developers, and town planners regard Model Town as the best place to live in the entire city of Lahore. The ex-Prime Minister

Nawaz Sharif maintains a home and holds an office in the society, while recently deceased former Prime Minister Benazir Bhutto is said to have maintained a home there. Hamza Shahbaz Sharif, MNA and son of ex-Chief Minister Punjab Shahbaz Sharif, Meem Sheen a senior journalist and many other MNAs, MPAs and bureaucrats also reside in the area."

Hameed (2006) reported, "that was where I first saw the celebrated reporter of his time, Mian Muhammad Shafi, known far and wide as Meem Sheen. I found him talking animatedly on the phone to an English newspaper's editor, with Hamid Nizami sitting across the table from him, a faint smile playing on his lips.

Aziz and Hameed (2016) narrated the history of cultural life of Lahore mentioning the Arab Hotel. Once the old-fashioned baithaks (sitting rooms of the orient) had gone out of use, the literati wanted a place where they could meet, eat and talk. By chance they started patronizing a small, unclean restaurant on Railway Road, opposite the gate of the Islamia College. A clean-shaven but dirty Arab from Kuwait, known as Bhai Aboud, ran the shop and was happy to serve kebabs and tea to his intelligentsia even on doubtful credit.

Soon the 'club' grew in numbers and in the quality of its customers. Chiragh Hasan Hasrat is said to have been the pioneer, and he brought in his friends and colleagues. Gradually it had a glittering membership: Abdul Majeed Salik, Ghulam Rasul Mihr, Akhtar Shirani, Syed Imtiaz Ali Taj, Professor Bokhari, Maulana Salahuddin, Husain Mir Kashmiri, Faiz Ahmad Faiz, Khizr Tamimi, Ashiq Batalvi, Hafeez Jullundheri, Abdul Majeed Bhatti, Madan Gopal Mittal, Sahir Ludhianvi, Abdullah Butt, Hameed Nasim, Zaheer Kashmiri, Shad Amritsari, Davinder Sathiarthi, Bari Alig, and others.

On the upper floor was the workshop of the famous calligrapher, Pir Abdul Hameed, who inscribed the Quran for the Taj Company. Others were to be found at Lord's down the Mall, and outside Regal Cinema, there was Café de Orient, a restaurant that served excellent food. Among those who frequented Orient were Hamid Nizami, Meem Sheen and a couple of other seniors.

The Pakistan Freelance Journalists Association (PFJA) expressed deep sorrow and grief over the sad demise of the renowned journalist Mian Muhammad Shafi (Meem Sheen). The condolence meeting of the association, convened on Tuesday with Iqbal Yousafi in the chair, paid rich tribute to the services rendered by the departed soul for journalism. Fazlur Rahman, Naeem Qureshi, Khalid Pervaiz Malik and Naveed Bukhari speaking on the occasion said that Mian Muhammad Shafi (Meem Sheen) was an important organ of the Pakistan's freedom movement and that his services both for Pakistan and journalism will be hard to forget. Prominent among the rest who also spoke on the occasion were Rahman Zulfi, Zafar Ali Raja, Tahir Lahori, Ibrahim Tahir, Imtiaz Rashid Qureshi, Afaq Ali Khan, Idrees Urmani, Kamal Rizvi, Ahsan Bashir and Habibur Rahman Urmani. Later Fateha war offered for the departed soul (PFJA 2012).

Journalism-Pakistan (2015) broke the news of sad demise of AS Afaqi. Late Afaqi started his career in journalism at daily Tasneem, the then mouthpiece of Jamaat-i-Islami. He also served as editor of weekly Aqwam of Meem Sheen, and was joint editor daily Aasar, published by Maulana Zafar Ali Khan's grandson Mansoor Ali Khan after the closure of Zamindar.

Mumtaz (2011) narrated the story of disintegration of Pakistan and birth of Bangladesh as, "I reached the conclusion that he (Sheikh Mujibur Rahman), was determined to make Bangladesh. By a coincidence, Mr

Bhutto's party won elections in West Pakistan and in Dhaka he said: Idhar tum, udhar hum (your government in Eastern wing and ours in Western). At the center, both parties would have ruled together. In my opinion, such utterance, plus the attitude of Mujib and Maulana Bhashani, made East Pakistan what is now Bangladesh. India also played a role by raising Mukti Bahini, an army for the liberation of East Pakistan. These factors created a situation which made it impossible for army men and officials from West Pakistan to live in East Pakistan. Hence, our people became strangers in their own country. I think we all are responsible for this situation. Nobody can disclaim responsibility."

Narrating further he wrote, "After the separation of the East wing from the West, trade and other links between them came to an end. There were many people who were not prepared to accept the situation. Senior journalist Meem Sheen (Mian Muhammad Shafi) hit his head against the floor and walls (when he came to know of this). There were several others who also had a similar feeling."

Role of Dr Israr Ahmad

Dr Israr Ahmad (26 April 1932 – 14 April 2010; MA, MBBS) was a Pakistani Islamic theologian, philosopher, and Islamic scholar who was followed particularly in South Asia as well as by South Asian Muslims in the Middle East, Western Europe, and North America. Ahmed worked briefly for Muslim Students' Federation in the Independence Movement and, following the creation of Pakistan in 1947, for the Islami Jami 'at-e-Talaba and then in 1950 joined Jamaat-e-Islami led by Abul Ala Maududi, but left the party when the latter opted for participating in electoral politics in 1957. Ahmed resigned from the Jamaat-e-Islami in April 1957 because of its involvement in national politics, which he believed was irreconcilable with the revolutionary methodology adopted by the Jama'at in the pre-1947 period. His interest in Islam and philosophy grew further and he subsequently moved to Karachi, Sindh Province in the 1960s, where he got enrolled in the University of Karachi.

In response to the state of emergency in 2007, Ahmed called for lifting the emergency, reinstatement of Supreme Court justices, and withdrawal of all actions taken in pursuance of the proclamation of emergency and the PCO law besides resignation of President Pervez Musharraf.

In a televised press conference, Israr Ahmed called for resignation of Pervez Musharraf from both president and chief of army staff. Ahmed appealed to President General Musharraf to lift the state emergency and step down for the nation's greater interests. At the television news channels, Ahmed also predicted and warned the nation that, "If the situation worsens, the NATO forces are waiting on the western front to move into Pakistan and may deprive the country of its nuclear assets while on the eastern front, India is ready to stage an action replay of Indo-Pakistani war of 1971 and has alerted its armed forces to intervene in to check threats to peace in the region."

In 2006, Canada's National Post newspapers quoted Ahmed as saying that "Islam's renaissance will begin in Pakistan... because the Arab world is living under subjugation. Only the Pakistan region has the potential for standing up against the nefarious designs of the global power-brokers and to resist the rising tides of the Jewish/Zionist hegemony.

Asia Times reports that in September 1995 Ahmed told the annual convention of the Islamic Society of North America: "The process of the revival of Islam in different parts of the world is real. A final showdown between the Muslim world and the non-Muslim world, which has been captured by the Jews,

would soon take place. The Gulf War was just a rehearsal for the coming conflict." He appealed to the Muslims of the world, including those in the US, to prepare themselves for the coming conflict.

An attempt was made to provide socioeconomic support for the Third Revival of Ummah, as envisioned by Late Dr Israr Ahmad RA (Ahmad 1993). As per Hadith Sharif the World will pass through five periods: i) Nubuwwah; ii) Khilafah; iii) Malookia; iv) Mulkan Jabree; and v) Khilafa alal Minhajun Nabuwah. We are living between the fourth and and fifth periods; the direct colonial rule over the Muslim Ummah has gone and indirect colonial rule is prevailing keeping us as beggars for knowledge, money and technology from the rich nations. The fifth period has commenced in the form of the New World Order, although really the Jew World Order, the Novus ordo seclorum, the new secular order; however, it has to be changed to the Just World Order of Islam, as predicted by Prophet Muhammad SAW narrated in Sahih Muslim as follows:

> "Allah brought the corners of the earth together for me, so I saw its eastern and western parts. The dominion of my Ummah will definitely reach as far as what was brought together for me (all parts of the world)" [Sahih/Authentic] - [Ibn Maajah - Abu Dawood - Ahmad - Muslim].

Hence, Dairy Science Park was launched as a humble mission to contribute to the revival of Ummah through utilization of indigenous resources for generation of Halal food and decent employment across the livestock value chain, in line with the vision of Dr Israr Ahmad.

Role of Jamila Subhan Qureshi

Jamila Subhan Qureshi has been Prof Qureshi's life partner, friend, supporter, motivator and love for a period of almost 35 years, from 22 December, 1984 to 7 February, 2019.

Coping up with the heavy professional responsibilities of Prof Qureshi

Extraordinary involvement of Prof Qureshi in official and professional assignments focused on welfare of the common man and was too heavy for my mother (his wife), in terms of resistance from his bosses and the powerful people, having conflict of interests with the helpless farmers. He has been a sensitive person, feeling his responsibilities more than his rights, as a public servant and a responsible citizen. My mother supported him in disposing of his duties. On the one hand she provided him moral support to sustain resistance from his bosses and on the other hand, she kept on taking care of their growing kids. However, such a situation caused an imbalance in our family life, subjecting my mother to wait for him for prolonged periods and to discuss the harsh realities that he was facing during his duty hours.

Prof Qureshi's Life Motto

The Late Meem Sheen conveyed the painful feelings of his broken heart to me which led to the establishment of mission of Prof Qureshi named as "Dairy Science Park" to be gifted to Prophet Muhammad (SAW), as an attempt for socioeconomic support for the Third Revival of Ummah, as envisioned by Late Dr Israr Ahmad RA (Ahmad 1993) and supported by Late Jamila Subhan Qureshi. This was a very humble attempt to implement the decree of Allah SWT communicated to the mankind through Prophet Muhammad SAW:

﴿وَمَا أَرْسَلْنَاكَ إِلَّا رَحْمَةً لِّلْعَالَمِينَ﴾

Wa ma arsalnaka illa Rahmatan lil alameen (And We have not sent you, [O Muhammad], except as a mercy to the worlds (Al-Qur'an: 21-107).

Hence, Prof Qureshi presented his motto as follows:

"I am devoted to easing the burdens of humanity, particularly within my local community through the initiatives of the Dairy Science Park. I pledge to apply my knowledge, skills, and experience, guided by the divine principles illuminated through Prophet Muhammad SAW and the benevolent guidance of Allah the Almighty. My life's purpose is to serve as a wellspring of relief, harmonizing both my earthly capabilities and spiritual insights to catalyze positive change in the lives of others."

Implementation of his Life Motto

Initial four years of the professional career of Prof Qureshi (1983-87) were served at Semen Production Unit Surezai, 14 KM towards south of Peshawar City. The station is located in a remote rural area, considered as a hard one lacking civic facilities. He got experience in breeding bulls selection, management and processing quality semen. Lack of an appropriate selection base and research setup for quality improvement were identified as the bottlenecks in genetic improvement of cattle and buffaloes in the province. Although the station is generating a huge amount of revenue through semen production, the staff working here never get benefitted out of this revenue, rather they are treated in a hostile manner by the high ups. Awarding special bonuses proportional to the income contributed by an employee may motivate the good workers to work harder. This is the basis of successes for the entrepreneurship models working in the private sector.

During 1987 he was transferred to Civil Veterinary Hospital Peshawar and worked at the outdoor patients' department (OPD). Here the progress was measured through the number of animals treated and fees collected, ignoring the impact of the hospitals on quality and productivity of animals. Medicines purchased at the lowest rates, associated with lowest quality as per public procurement rules, never leading this to no improvement of health and hygienic conditions of the livestock herds.

In 1990, Prof Qureshi was selected as Research Officer, Veterinary Research Institute Peshawar. He worked at the enzyme immunoassay laboratory and herd health program and got linked with biotech experts and farmers at local and international levels. The miserable conditions of peri-urban dairy farms were examined closely. The farmers were organized into Sarhad Dairy Farmers Association (SDFA) and linked with banking institutions, universities, marketing agencies and public service organizations for securing the required support.

In the meantime, a visit was made to Bangkok for attending a 40 days Swamp Buffaloes Reproduction. The FAO Regional Office for Asia and the Pacific was visited and information on utilizations of livestock resources in the regional countries was collected. Pakistan's performance was found poor. PhD thesis research was initiated on a private buffalos' farm for investigating nutritional status with reproductive performance. Economic losses to the tune of US$ 20 billion was found at country level and published in the national dailies.

Provincial Chief Minister KP Mr Mehtab Ahmad Khan Abbasi took notice of these losses and invited me to prepare a Livestock Development Plan for bringing drastic reforms in the sector. However, his government of Pakistan Muslim League (N) was terminated through a military coup and the plan could not see the light of the day. His successor Chief Minister Akram Khan Durrani endorsed the plan to

Secretary Agriculture for implementation but he filed it because it called for policy change which was resisted by those having vested interests in the prevailing system.

Prof Qureshi recalls his first consultation with Mr Abdul Rahman Ilyas during 2010 in Egypt, who suggested the name Dairy Science Park be given for our struggle to utilize the livestock resources of the region for the prosperity of the people. Interest of Sardar Mehtab Ahmad Khan Abbasi, Governor KP, during his tenure-ship as Chief Minister during 1998 motivated Prof Qureshi to continue his struggle. Various provincial dignitaries supported the concepts and Mr Inayatullah Khan took the message very seriously and pursued it through release of ADP funds and support of an autonomous DSP Board. The Chairman HEC, Prof Mukhtar Ahmad has been very kind in supporting DSP as Center of Excellence, but the Center was rejected by Vice Chancellor UAP, Prof Zahoor Ahmad Swati.

As a sensible and responsible global citizen, Prof Qureshi recognizes his responsibilities and duties to the Creator of himself and the Universe and his behavior towards his fellow beings, animals and the environment. God, our Creator, has provided guidance to us through his prophets, 124,000 in number, with Adam AS as the first one and Muhammad (SAW) as the last one. All prophets have taught about oneness of God to be worshiped and instructions of the prophets to be followed for getting success in this World and the Hereafter. Islam is the last religion revealed from Allah SWT through his last prophet Muhammad (SAW). Prof Qureshi feels comfortable to be the follower of Prophet Muhammad (SAW) as a Practicing Muslim and an enlightened Global Citizen.

Duties at SPU Surezai and CVH Peshawar

During his first appointment at the end of 1983 as Veterinary Officer/Farm Manager at Semen Production Unit Surezai, Prof Qureshi and his family had received a warm welcome by Mr Aftab, Laboratory Manager. He was an Animal Husbandry graduate from the University of Agriculture Faisalabad and a social personality. He had certain grievances against Dr Sultan Zeb, the head of the Semen Production Unit, who trusted watchmen, especially Unwan ud Din and passed his orders to both of us through that person. He accepted low quality feeds from the contractor which was resisted by both of us. He used to create hurdles for both of us in disposing of our official duties and interacting with the junior staff. He was succeeded by Dr Muhammad Aslam and Dr Mir Kabul Khan, who were innovative practitioners and introduced high yielding Mott Grass at the farm, for feeding to the breeding bulls.

Prof Qureshi used to work at the fodder crops fields, animal sheds and laboratories. At the end of 1984 got got married and enjoyed carefree life at a rural livestock station. Our family and relatives from Village Fazal Haq Surani, Bannu enjoyed a lot. He worked hard during the initial five years of his career and got a good command in his professional domain, with a dominant opinion on various issues.

He worked with dedication and improved the quality of cattle and buffalo semen (liquid as well as frozen) being supplied to various locations in the province. Dr Muhammad Jan Khan was Director LDD at that time and very strict in duties and quality of work. He was satisfied with the performance of Prof Qureshi although he had been angry with most of the field officers and a province-wise protest was held against his strict attitude.

In 1987, Prof Qureshi got transferred to Peshawar as Veterinary Officer, Civil Veterinary Hospital. He had a good interaction with the common farmers and some influential people, especially big farmers,

processors and exporters. My mother (his wife, Jamila Subhan Qureshi) had been assisting him in this process and sacrificed her time and resources for these tasks.

Duties/Adventures at VRI Peshawar

He was promoted to the post of Research Officer as per recommendation by the then NWFP Public Service Commission during 1990. He assumed charge at Enzyme Immuno-assay, Veterinary Research Institute, Peshawar under supervision of Dr S Nasir Hussain Shah, where I had already completed his MSc Hons Theriogenology research.

He introduced the Herd Health Program for the commercial farmers and initiated superovulation and embryo transfer research under a very primitive, non-scientific and hostile environment. He wrote a synopsis on this topic for his PhD studies at the University of Agriculture Faisalabad which was accepted based upon his achievements in superovulation, getting 13 ova per Damani ewe. Dr Nasir projected his research and presented the progress before Secretary Agriculture KP (former NWFP), Mr Ejaz Qureshi, a bold bureaucrat, who later on got promoted to Chief Secretary KP (the then NWFP) from 2003 to 2007. He got funds to the tune of Rs.32 million for establishing the Center of Animal Biotechnology.

With release of funds by the provincial government of Khyber Pakhtunkhwa, Dr Nasir tried to manipulate the procurement process through unfair interventions. Prof Qureshi and Dr Pervez Shah were working in the project silently, tolerating the torture exerted by Dr Nasir. In the meanwhile, Dr Iqbal Khattak joined their team and directorship of VRI was taken over by Haji Dr Abdul Latif from the extension wing of the department, which was taken over by Dr Muhammad Bashir as Director. After the arrival of Dr Iqbal, their resistance against Dr Nasir rose to a higher level and the Director had to intervene, relieving Prof Qureshi and Dr Iqbal from the biotech setup back to their original positions at VRI.

At Hides and Skins Section VRI Prof Qureshi worked on ADP Project and initiated hides and skins improvement activities in four districts of the province through slaughter houses and civil veterinary hospitals. An awareness campaign was launched regarding the pre and postmortem losses to the quality of hides and skins due to poor practices at farms and slaughterhouses. A special knife was designed for flaying, the removal of hides and skins from animals' bodies. My mother contributed to the mission, providing my father, Prof Qureshi, a worries-free life at home.

Interaction with private dairy sector

Under such a hostile environment at VRI under Dr Nasir, Prof Qureshi had to change his PhD research synopsis from "embryo transfer" under Dr Nasir to "reproduction nutrition interaction in dairy buffaloes" under Dr Ghulam Habib at the University of Agriculture Peshawar. He is a hard working and keen researcher. Prof Qureshi wrote a synopsis on the relationship of pre and postpartum nutritional status on reproductive performance in Nili Ravi dairy buffaloes under conventional farming systems in northern Pakistan. The study was financed by the World Bank-assisted Agricultural Research Project II (ARP-II), initiated to partially overcome some of the funding problems and provide institutional development in the areas of organization, planning, and management of the research system at both the federal and provincial levels.

Commercial private buffalo dairy farmers were selected in the peri urban areas of Peshawar and Mardan. These farmers are facing numerous issues of technical, social and economic nature. Poor farming practices are raising the cost per unit productivity of animals; the low profitability status of their holdings

doesn't allow them to live a graceful life and the hostile marketing network drains the potential profit away from their business cycle.

Close working of Prof Qureshi with these resource-constrained farmers motivated them to get organized into Sarhad Dairy Farmers Association which, later on, was converted into Khyber Pakhtunkhwa Livestock Farmers Welfare Association, registered with the Government of Khyber Pakhtunkhwa, Pakistan as a non-government organization (NGO). Maazullah Khan had been the pioneering president and Mr Asif Awan as the current one. Mr Kamran Akram Khan, Mr Abdul Hafeez and Khanzada Ahmad Kamal have worked together to promote the Association further. Mr S Azam Shah presented the farmers opinion at higher fora like Pakistan Livestock and Dairy Development Board, Federal Ministry of Agriculture and Dairy Science Park. The provincial Livestock Department of the Government of Khyber Pakhtunkhwa was not happy with these developments as they desired to keep the veterinary hospital running through availability of sick animals and their helpless and voiceless owners. Throughout his professional life Prof Qureshi shared the issues faced by the poor stakeholders, with my mother and considered possible solutions.

Shaping up the struggle as Dairy Science Park

The first consultation of Prof Qureshi with Mr Abdul Rahman Ilyas during 2010 in Egypt resulted in the generation of the name Dairy Science Park to be given for our struggle to utilize the livestock resources of the region for the prosperity of the people. Interest of Sardar Mehtab Ahmad Khan Abbasi, Governor KP, later on Chief Minister during 1998, motivated him to continue his struggle. Various provincial dignitaries supported the concept and Mr Inayatullah Khan took the message very seriously and pursued it through release of ADP funds and support of an autonomous DSP Board.

A biennial series of international conferences and industrial exhibitions was launched, patronized by the Chairman Higher Education Commission Islamabad. A Biorisk Management Initiative was launched with the assistance of Sandia National Laboratories USA, training 104 persons-times. Locally emerging entrepreneurs were provided technical, legal and administrative support for survival under hostile regulatory environments, where the government agencies tried to provide cheaper food to the consumers, regardless of quality standards; discouraging the entrepreneurs with quality products.

The Chairman HEC, Prof Mukhtar Ahmad had been very kind in supporting DSP as Center of Excellence, however Prof Zahoor Swati Vice Chancellor rejected the idea while Selcuk University Konya, Turkey hosted the fourth International Congress and Industrial Exhibition on Dairy Science Park; Governor Balochistan agreed for establishing Quetta Technopark and Prof Ghazala Yasmeen Vice Chancellor Women University Mardan supported the establishment of Mardan Technopark.

Looking at the successes, Chief Minister Khyber Pakhtunkhwa province, Mr Pervez Khattak approved the setting up of a Task Force on Dairy Science Park. However, Mr Muhammad Israr, Secretary Agriculture, Government of Khyber Pakhtunkhwa considered the idea a threat to their vested interests and buried the case under a heap of files, through bureaucratic tactics.

Food and Agricultural Organization (FAO) of the United Nations Pakistan offered national consultancy to the President DSP which came up with development of a proposal for establishment of Livestock Technopark Peshawar as an autonomous body, with full regulatory, financial, administrative and

legislative powers to protect the interests of the weaker stakeholders, focused at generation of decent employment and exportable surpluses across the livestock-based Food Value Chain.

International Trade Center (ITC-UN) engaged Prof Qureshi as National Consultant for preparing Balochistan Livestock Breeding Policy. After wide-based consultation with the stakeholders, Livestock Technopark Quetta was proposed to be hosted by Balochistan University as a triple-helix model of good governance covering Academia-Industry-Government Nexus. Balochistan CCI, the provincial departments of Forest, Local Government, Industries and livestock and three Universities viz BUITEMS, LUAWMS, SBKWU were engaged as public sector holders and the farmers/processors associations as private sector stakeholders. The policy was split into several sections comprising: i. Farming to Entrepreneurship; ii) Farmers' and Processors' Empowerment; iii) Integrating SDGs; iv) Establishing Endowment Fund; v) Establishing Functional Units; v) Introducing Good Governance Model - Establishing Livestock Technopark Quetta.

The great price paid by our family

Prof Qureshi's wife (my mother) had been diffusing his worries and concerns on resistance against his mission coming from the provincial government and the university administration. To undo the successes achieved under the Mission, the Vice Chancellor University of Agriculture Peshawar, Prof Zahoor Swati ordered termination of DSP and Prof Noor Pao Khan withheld his monthly salary for seven months. It caused severe stress and strains to our family. My mother, Jamila Subhan Qureshi faced hardships in meeting the domestic expenses. She was unable to sustain the situation and passed away on 7 February, 2019 as Martyr of the Dairy Science Park Mission. Inna lillahi wa inna ilihi rajiwoon.

His Goals

Based upon his life motto, Prof Qureshi has set certain goals for his life, comprising both spiritual and material components. As the spiritual component, he wishes to be faithful with a productive response to Allah SWT, our Creator, Sustainer and the Almighty God. In accordance with the five pillars of Islam (Islamic Relief 2023): i) he believes in the oneness of Allah SWT and the finality of Prophet Muhammad SAW as the last one of all messengers of Allah SWT; ii), he prays Salat five times a day; iii) he keeps fasting during the Islamic Month of Ramadan; iv) he pays Zakat on annual basis and; v) he has performed Hajj, pilgrimage to Makkah and Madinah, during the year 2014 along with my deceased mother and my sister Sadia Subhan Qureshi. During 2023 Umrah was performed along with my new mother, myself my sister Emaan ul Haq Qureshi, my wife and my kids Manha Gul and Zaland Gul.

Prof Qureshi believes that success in the World and Hereafter may be achieved only after disposal of our duties as a Servant of the Creator. He believes that he is responsible for spreading the Last Word of Allah SWT to all the people around the Globe and he is participating in Dawah and Tabligh activities for achieving this objective (DSP 2023).

He believes that Prophet Muhammad (SAW) is Rahmatullilalameen, a blessing for the world. He has dedicated his life with all his capacities and resources to serve mankind through Dairy Science Park, a sacred mission for generating decent employment and Halal foods for indigenous utilization and export, thus strengthening local economies. He agrees with Prof John L. Esposito speaking at University of Kentucky on Wednesday, September 10, 2014 on "The Future of Islam" (Videao-11). He discussed his book on the portrait of Islam today and tomorrow, drawn by a lifetime of thought and research to sweep

away the negative stereotypes of the fastest growing religion in the world. He mentions Islam as a living religion. Osama Bin Laden was mentioned as an agent of resistance against foreign aggression in Muslim countries and not as a follower of Islamic Theology.

Regarding the material component of his motto, Prof Qureshi has been utilizing his knowledge in animal science for the welfare of the people. He considers the food resource base, especially the food animals and the allied human and natural resources for meeting the employment and food needs. Bad governance in the developing and especially the Muslim countries, has resulted in prevailing poverty in the countries, despite their rich livestock resource base. He has 36 years of livestock extension, research, university and administrative experience and he has observed the inefficiency of public sector organizations very closely. At the end of his active career, he had an opportunity to work as National Coordinator (Livestock), Food and Agricultural Organization of the United Nations and advised them on transformation of the sector to accommodate concerns of the farmers and food processors. His report failed to break the red tape of local, national and international bureaucracy involved in bad governance; however, the struggle continues under the Dairy Science Park (DSP 2021).

Resistance faced

Resistance by Secretary Agriculture GoKP

On advice of the Senior Minister Khyber Pakhtunkhwa, the Chief Minister approved a Task Force on DSP to overcome bureaucratic hurdles faced by stakeholders across livestock value chain. Academia Industries Linkages, Entrepreneurship Development, Public Private Partnership, Consumers Preferences, Quality Control for hygienic and Halal status of products and sustainability through Endowment Fund, were the main features of the Terms of Reference. There was a conflict of interests as the farmers and processors are working without any visible support from the public sector organizations. Development funds are provided to government organizations with no say of the real stakeholders. Rates of milk and meat are fixed by district administration at lowest levels without considering the production cost or quality based grading.

So secretary agriculture Government of Khyber Pakhtunkhwa, Mr Israr did not issue relevant Task Force notification, violating the directive of Chief Executive of the provincial government.

Needless to mention that in addition to international support, the previous authorities of the provincial government had endorsed the concept of Dairy Science Park in the larger interest of the province and the region. The Authorities include Ex-Chief Ministers Akram Khan Durrani and Sardar Mehtab Khan Abbasi and Ex-Additional Chief Secretary, Mr Muhammad Azam Khan.

Resistance by Vice Chancellor UAP

Earlier, Prof Zahoor Ahmad Swat, Vice Chancellor UAP, signed a Memorandum of Understanding with President DSP and Vice Chancellor Khyber Medical University in the presence of Prof Mukhtar Ahmad, Chairman Higher Education Commission of Pakistan, titled, “Collaborative Biorisk Management Initiative (CBMI)”. The MoU covered consultative meetings of experts from various disciplines of biological sciences to develop curriculum on Biorisk Management. Biorisk Management Curriculum will be designed, developed, and implemented as a separate discipline and its incorporation into the existing curricula of life sciences as it relates to courses where infectious agent handling occurs. Training of stakeholders will cover implementing the newly developed curriculum and to reach out to other

universities to design, develop, and implement similar curriculum to establish Biorisk Management Curriculum and practices throughout the region.

In the meantime, the Fourth International Conference and Industrial Exhibition on Dairy Science Park was held at Konya Turkey, participated by delegates from 20 countries, 50 from various parts of Pakistan. The delegates of the Conference visited Konya Teknokent (technopark) on the third day of the conference, under supervision of Dr Mithat Direk. The delegates from Pakistan and various other countries visited Konya Teknokent on 3 November, were excited to know about the achievements made at the Teknokent. Prof Birol, head of the organization, was not available on the day of our visit to Teknokent and we were given a presentation by Mr Mehmet. It was recommended that a technopark will be established at Mardan (TPM), with the leading role of Women University Mardan, Dairy Science Park, KP Chamber of Commerce and Industries and SDGs Task Force. Similar technoparks will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBK WU. Mission of the two technoparks will be the utilization of indigenous human and natural resources for welfare of the people through academia – industry linkage, with focus on entrepreneurship development and hygienic food production for local consumption and export.

The Higher Education Commission of Pakistan offered establishment of the Center of Excellence on Dairy Science Part at UAP, with an initial allocation of Rs.400 million. However, Prof Zahoor Swati VC UAP did not allow Prof Qureshi President DSP/Dean FAHVS UAP to present the case before HEC and advised him to stop all activities of DSP through a letter issued by Dr Shahid Sattar Director VC Secretariat UAP (No.169/DVCS/UAP dated 24-102017 asking Prof Qureshi as well as other faculty members to dissociate themselves from DSP, a private company. Through a reply letter Prof Qureshi clarified that DSP was not a private company but a registered society. The case has reached the office of Dr Shahid Sattar as a directive of the Chief Minister KP issued vide letter No.1813 dated 2-8-2017 to constitute a Task Force for Dairy Science Park but he regretfully, is withdrawing academic support from the DSP. It is against official decorum and interest of the University and the people of Khyber Pakhtunkhwa province. His office was supposed to facilitate the office of the Vice Chancellor in improving efficiency and impact of the University by facilitating productive academicians to play their due role in generating solutions to the issues faced by the government, farmers, industry and civil society. However, his role was questionable as he had already managed to terminate the lease agreement with a private party for running the university feed mill. Prof Qureshi considered the advice of VC Secretariat contrary to the interests of the University and people of the Region and refused to obey.

Prof Swati removed the huge data from the University Website http://www.aup.edu.pk/ covering DSP activities prevailing over a decade regarding organization of the biennial international conferences and exhibitions series, international workshops on biorisk management under sponsorship of Sandia National Labs USA, technical, legal and administrative support to the livestock producers and processors; and policy reforms under supervision of the Senior Minister GoKP Mr Inayatullah Khan. Prof Swati terminated the agreement unilaterally, with Zafar Paracha, private partner for operation of the University Feed Mill; which became redundant as a result, after successful operation under lease arrangement with the private partner.

Resistance by GoKP in FAO-UN Reforms Process

As the National Consultant FAO-UN, the author worked on KP Livestock Action Plan 2019. Prof Qureshi worked hard in collaboration with the Livestock Farmers and Processor Organizations, civil society, line departments/universities, elected representatives of provincial assemblies and district councils and expert individuals. Weaker stakeholders were identified across the Livestock Value Chain and Livestock Technopark Peshawar was suggested as a Triple Helix Good Governance Model of Academia-Industry-Government Nexus. A conflict of interest raised between the Powerful and weaker stakeholders. Dr Sanaullah Khan facilitated the powerful stakeholders to bulldoze the FAO KP Livestock Action Plan 2019 (FAO 2019) accepted by FAO as Good Practices Mode (Qureshi 2021), in collaboration with Dr Sher Muhammad, Director General Livestock and Dairy Development Department GoKP, pressurizing the provincial head Mr Waleed Mahdi; AFOR Program, FAO, Islamabad Mr Farrukh Toirov and Ms Mina Dowlatchahi FAO Representative Pakistan, to ignore the proposal in spite of paying the consultancy fees. In fact it was a conflict of interests among the powerful and weaker stakeholders across the livestock value chain (FAO 2019a).

Victimization through milk theft inquiry

I unearthed an embezzlement in milk sale proceedings amounting to Rs.2.384 million, as Dean Faculty of Animal Husbandry and Veterinary Sciences (FAHVS), University of Agriculture, Peshawar, through an inquiry committee in response to letter dated 6-2-2014 submitted by Dr Ihsanullah Dairy Farm in Charge through Dr Sohel Ahmad Dairy Technology In Charge and Prof Sohel Akhtar Chairman Livestock Management Department. The Inquiry Report was submitted to the Vice Chancellor, mentioning the loss, caused during 2012-2013 in the milk sale process through printing and sale of fake coupons. Dr Saeed ur Rahman son of Prof Dr Hidayatur Rahman, a senior most and influential employee of the university, was in charge of the printing, stocking and sales of coupons and reconciliation with the Finance Directorate and was identified as the main culprit.

Father of the culprit manipulated the inquiry report at University level and managed to make further inquiries through committees notified on 18-3-2014, 19-6-2014, 7-1-2015, who tried to tie up supervisory officers, including the undersigned, with the culprit. The reports were rejected by the Syndicate UAP in the 98th meeting held on 25-7-2017, constituting another committee. This committee held the only meeting on 14-09-2017 and recommended that the embezzled amount be equally recovered from all. The Registrar office notified it as such.

The undersigned, along with others, approached Peshawar High Court against the University vide Writ Petition No. 1009/P-2019 and got status quo order on 25-2-2019. The undersigned got retired from service on 19-3-2019 at the age of 60 years.

A statement was recorded in response to telephonic call from Anticorruption Department, Government of Khyber Pakhtunkhwa on 4-8-2020. Relevant record was already submitted to them by Prof Sohel Ahmad and Dr Ihsanullah.

Victimization identified by Peshawar Higher Court and Contempt of Court

The Honorable Peshawar High Court vide WP No.5127P/2018, issued Judgement Sheet on 28-5-2019, copy attested on 7-7-2019, directing as follows:

a. “It has been noted that the petitioner has been treated differently by creating unnecessary complications and hurdles in his way by the respondents by referring to the rules which itself are not only ambiguous but also silent on the point raised before the Court. We have no doubt in our mind that the petitioner is a similarly placed person as to those of WP No 5120-P/2017, therefore, shall be dealt with in the same manner.”

b. “Accordingly, the instant writ petition is allowed and the respondents are directed to issue order of reverting back the petitioner from TTS to BPS within a fortnight from the date of receipt of this judgment.”

During the proceedings of the Honorable Court, the UAP administration stopped salary of Prof Qureshi for seven months (February to August 2018), resulting in significant financial and nonfinancial losses to him and his family, which led to the death of his wife on 7 February 2019.

An appeal was made before the Vice Chancellor for rectifying his pension sanction on 27-5-2019 for Rs.9.89 million and on 27-11-2019 for Rs.3.78 million in light of Peshawar High Court Writ Petition No.5127-P/2018, etc. The appeal also requested for implementation of the order passed on 2-2-2016 by Apex Supreme Court of Pakistan in Civil Appeal No.1214 of 2013 as well as well as Legal Advice sought about order of Lahore High Court dated 11-10-2018 passed to Writ Petition No 216562/2018 and implemented by University of Agriculture Faisalabad vide Notification No.PS-1(1)144/22477 dated 22-11-2018, covering payment of presumptive increments (para-ii “…… For this purpose, pay and post in BPS shall be raised on presumptive basis in line with the TTS post.”). The UAP administration ignored the appeal, which comes under Contempt of Court.

Leave Encashment admissible under UAP Leave Statutes 2016, clause 44(i) (Annex-p.77-78), was denied to the petitioner although his switch back to BPS was notified by UAP in compliance with the directives of Peshawar Higher Court, which comes under Contempt of Court.

Astonishingly, a Last Pay Certificate was issued by the Registrar University of Agriculture Peshawar vide No. Nil/S-I/UAP dated 11-11-2019, without any justification and legal authority, reducing his monthly pay to 141,720, total pay to Rs. 216,207 and net pay to Rs. 195,122. The Registrar Office did not provide him with his career documents requested through a letter dated 6-2-2020. The UAP has notified his switch back to BPS as per directive of Peshawar High Court while the financial benefits have been denied which comes under Contempt of Court.

While calculating his pension, an amount of Rs. 1,602,964 was deducted in the name of pension contribution in lieu of gratuity paid for the period 2/2/2016 to 19-3-2019. Pursuant to directives of the Honorable Peshawar Higher Court for his switch back from TTS to BPS which was notified by UAP; hence deduction of his pension contribution reflects intentions of UAP administration to deny benefits of his switch back to BPS. Pension contribution is paid by the employer not the employee as evident from AG Office Letter dated 19-3-2009 for his service with Government of Khyber Pakhtunkhwa and payment of his pension contribution by UAP for the period of his service from 19-1-2005 to 1-2-2006. However, the period protected by Peshawar High Court (2-2-2016 up to retirement on 19-3-2019) has been denied, which falls under Contempt of Court.

The Government of Pakistan, Finance Division, vide their letter number F-11(1)-Reg-6/2013 has directed in light of Supreme Court of Pakistan Judgement in Civil Appeal No.48 of 2013 that “…… We also direct

that in future if there is any delay in finalization of the pension benefits cases of the government servants, widows or orphan children and matter is brought to notice of this Court, the Head of the concerned department shall also be held liable to the Contempt of Court and shall be dealt with strictly according to the law". In case of the petitioner the deadline for payment of his pension liabilities is 20-4-2019, which is still awaited and comes under Contempt of Court.

The Honorable Court was requested to initiate Contempt of Court Proceedings against the Vice Chancellor University of Agriculture, Peshawar and advise him to provide relief to Prof Qureshi.

Victimization leading to death of wife of Prof Qureshi

Salary of Prof M Subhan Qureshi/Ex-Dean Veterinary Sciences (BPS-21), University of Agriculture Peshawar (UAP)/President Dairy Science Park was stopped by the Vice Chancellor Prof Noor Pao Khan for a period of seven months leading to frustration in the family and ultimately death of wife of Prof Qureshi.

9. Establishing Dairy Science Park - His Life Mission

Preamble

As already discussed under Chapter 8, the Late Meem Sheen conveyed the painful feelings of his broken heart to Prof Qureshi which led to the establishment of his life mission named as “Dairy Science Park” to be gifted to Prophet Muhammad (SAW), as an attempt for socioeconomic support for the Third Revival of Ummah, as envisioned by Late Dr Israr Ahmad RA (Ahmad 1993) and supported by Late Jamila Subhan Qureshi. This was a very humble attempt to implement the decree of Allah SWT communicated to the mankind through Prophet Muhammad SAW:

﴿وَمَا أَرْسَلْنَاكَ إِلَّا رَحْمَةً لِّلْعَالَمِينَ﴾

Wa ma arsalnaka illa Rahmatan lil alameen (And We have not sent you, [O Muhammad], except as a mercy to the worlds (Al-Qur’an: 21-107).

Hence, Prof Qureshi presented his motto as follows:

"I am devoted to easing the burdens of humanity, particularly within my local community through the initiatives of the Dairy Science Park. I pledge to apply my knowledge, skills, and experience, guided by the divine principles illuminated through Prophet Muhammad SAW and the benevolent guidance of Allah the Almighty. My life's purpose is to serve as a wellspring of relief, harmonizing both my earthly capabilities and spiritual insights to catalyze positive change in the lives of others."

Chronological Developments

1. Livestock Development Plan was prepared on advice of the Ex-Chief Minister/Governor Khyber Pakhtunkhwa, Sardar Mahtab Ahmad Khan Abbasi, communicated vide letter dated 30th November, 1998, for productive utilization of provincial livestock resources targeted at export.

2. The Plan was updated to Dairy Science Park through three successive international workshops held in 2011, 2013 and 2015 at the University of Agriculture Peshawar.

3. The President Khyber Pakhtunkhwa Chamber of Commerce and Industries (KPCCI), Mr Zahidullah Shinwari approved the Standing Committee on Livestock for integrating various stakeholders.

4. The Minister for Agriculture, Sardar Ikramullah Gandapur inaugurated Livestock Business Facilitation Desk at KPCCI.

5. The Special Assistant to Chief Minister on Law, Mr Arif Yousaf supported legislative reforms to protect interest of the stakeholders during the process of industrialization. He commended acceptance of the Park by the United Nations for two sustainable goals of self-employment for the youth and hygienic food production for the people of KP and FATA. He advised for perusal of the SDGs at the Cell established at the Provincial Assembly of Khyber Pakhtunkhwa.

6. The Special Assistant to Chief Minster on Livestock, Mr Mohibullah Khan supported the plan for preparing the province for International Halal Meat Market and advised for development of a policy to address the current challenges.

7. The DSP head office/Display Center was established at the City Towers, University Road Peshawar and the Park was registered under Societies' Registration Act XXI of 1860 to facilitate entrepreneurship development for young graduates and provide market linkages for the local livestock and poultry production system. An MoU was signed with the Khyber Institute of Veterinary Sciences, Peshawar for collaboration in livestock entrepreneurship development (LED).

8. Collaborative arrangement was held with the Center of Excellence for Bovine Genetics (CEBG), Pakistan Army for utilizing the semen and embryos from elite dairy and beef ruminants at the medium sized farms in the province and FATA.

9. A collaboration on "Biorisk Management" was completed with the Sandia National Laboratories USA. A total of 105 persons-times were trained in various countries on the subject. The delegates belonged to various universities, government ministries, private sector and civil society. An integrated curriculum package was developed on Biorisk Management to be integrated into Doctor of Veterinary Medicine degree program in Pakistani Universities. Senior Management and Policy Makers participated in the workshops, focused at implementation of the Biorisk Management activities.

10. A letter of intent was signed with the Chinese Academy of Agricultural Sciences for collaborative research on development and trade of Halal products.

11. Focal Points were appointed for the Park for Australia, China, India, Pakistan, Afghanistan, Middle East, Turkey, Netherlands, USA and Canada.

12. The Governor Khyber Pakhtunkhwa appreciated the mission and placed the Dairy Science Park on his official profile at FATA-DA http://fatada.gov.pk/aboutus/governers-profile/.

13. The Senior Minister for Local Government and Rural Development, Mr Inayatullah Khan allocated Rs.200 million for establishing a model slaughter house in consultation with the Park.

14. The Senior Minister urged upon efficient utilization of the natural resources available in the Khyber Pakhtunkhwa province for the welfare of the people. The gap between the policy makers, academia and industry was highlighted. The Dairy Science Park (DSP) was declared as a platform to bridge up this gap. The Senior Minister advised that the amount of Rs 200 million released by the Local Government, Elections and Rural Development Department KP for the establishment of Slaughterhouse at Peshawar may be utilized in appropriate consultation with the DSP experts.

15. The Senior Minister advised that an autonomous DSP Authority may be established under the supervision of eminent academicians, and representatives of the Government, industry, farmers and civil society, focused on the burning issues of self-employment and hygienic food production. The Authority will provide an infrastructure for Business Incubation Center (Rs.250 million) to promote industrial research under an Endowment Fund (Rs.250 million). This was in line with the HEC vision of

"facilitating higher educational institutions to develop entrepreneurship capacities and mindsets of youth".

16. Chief Minister KP approved the DSP Task Force for boosting the commercialization process in the livestock sector.

17. Fourth International Conference and Industrial Exhibition for Dairy Science Park was held at Selcuk University, Konya, Turkey and an MoU was signed with Konya Technopark for research and development linkages.

18. Fifth International Conference and Industrial Exhibition was held at Quetta during Balochistan Livestock Expo 2019. Dairy Science Park Balochistan Chapter was established at the Quetta Chamber of Commerce and Industries and the Livestock Entrepreneurship Development Initiative was launched. The Quetta event focused on the establishment of Quetta Technopark in partnership with the FAO-UN and Government of Balochistan. Peshawar Technopark was to be suggested through similar exercise. DSP Governance Model was shared with Food and Agriculture Organization Quetta during a policy workshop hosted by the provincial livestock department.

19. The Sixth International Conference and Industrial Exhibition on Dairy Science Park was held at the Islamia University Bahawalpur (IUB) on March 20-21, 2023, co-organised by Camel Association of Pakistan (CAP) and IUB. with the theme "Parallel Social Enterprise for the Vulnerables.

20. FAO-KP Livestock Action Plan 2019 was prepared as National Consultant for demonstration of the Good Governance Model in the provincial livestock sector; however, it was turned down by the powerful stakeholders, having conflict of interests with the livestock farmers, products processors and emerging entrepreneurs.

21. Worked with the International Trade Centre (ITC-UB) as a National Consultant for developing the "Balochistan Livestock Breeding Policy 2022." An Action Plan and Implementing Strategy were suggested involving various participating organizations to deliver meaningful services to the community focused on entrepreneurship development for generating decent employment and exportable surpluses under Livestock Technopark Quetta, in line with SDGs 2, 3, 5, 7, 8, and 16.

22. Dr Abdul Rahman Ilyas, Advisor to ASRT President, Government of Egypt for Technology Innovations and Collaborations, desired establishing Dairy Science Cairo (DSPC), a joint project of Academy for Scientific Research and Technology (ASRT) and Dairy Science Park Peshawar Pakistan. He is the co-founder of DSP alongwith Prof M Subhan Qureshi. Dr Amr Faroukh Abdelkhalik Vice President and Mahmoud Sakr President ASRT have endorsed the proposal. DSP Egypt Chapter was established for implementation of the proposed project.

Stakeholders from the Academia and the Private sector had been interacting under the umbrella of Dairy Science Park for more than a decade, through a biennial series of international conferences and industrial exhibitions held in November 2011, 2013 and 2015 at Peshawar and during 2017 at Konya, Turkey. DSP 2019 was held at Balochistan University and DSP 2022 at Islamia University Bahawalpur.

The newly developed entrepreneurship models in milk and meat processing and marketing were facilitated through technical and marketing support, ensuring their survival and further growth. The relevant shops with good quality products, have to sell their products at relatively higher prices but are frequently raided by the District Administration. Such practices discourage the young entrepreneurs to continue the activities and deprive the consumers from getting high quality products. The Minister Local Government appreciated their meat quality during a presentation and recommended their exemption from the general meat rates.

A silage production facility was established by a private farmer at Mardan, Sahibzada Ahmad Kamal, with the financial assistance of USAID Agribusiness Support Program and technical/research facilitation by DSP-UAP team. The University of Agriculture Peshawar generated several entrepreneurship models in the form of rabbit and quail farming, maggots' meal, dairy cattle feed and stress management modules for exotic and crossbred cattle and poultry.

Linkage with Australia and New Zealand

A visit was made to Bangkok for attending a 40 days Swamp Buffaloes Reproduction during 1994. The FAO Regional Office for Asia and the Pacific was visited and information on utilizations of livestock resources in the regional countries was collected. Pakistan's performance was found as poor. PhD thesis research was initiated on a private buffalos' farm for investigating nutritional status with reproductive performance. Economic losses to the tune of US$ 20 billion was found at country level, in comparison to New Zealand and published in national newspapers.

After termination of Nawaz Sharif PMLN Government by General Pervez Musharaf in 1999, the Chief Minister Livestock Plan Development lost support for implementation of the Livestock Development Plan. However, the new government focused on economic revival of the country through utilization of indigenous resources. A representative of the new government Mr Hanif Qureshi approached Prof Qureshi and asked for preparation of a report for the President. The Report was submitted and the President of Pakistan issued a directive that, "the country possesses a huge livestock resource-base, which may be developed for producing exportable surpluses contributing to the economic revival of the country".

During a visit to a dairy farm in the suburbs of Auckland, President Musharraf said that Pakistan would utilize advancements, which New Zealand has made, to develop this vital sector on modern lines (Business-Recorder 2015). This would give a boost to Pakistan's value-added dairy product exports. A collective organization, Fonterra, organizes about 12000 dairy farms across New Zealand. The country produces 14 billion liters of milk per annum and its exports in dairy related products amount to US$10 billion per annum with 40 percent share in the world market. President Musharraf later visited a high technology equipped manufacturing plant and a museum in Auckland.

Since 2007, the Australian Centre for International Agricultural Research (ACIAR) supported collaborative efforts between Pakistan and Australian research agencies—most notably the University of Veterinary and Animal Sciences in Lahore, Charles Sturt University, and the University of Melbourne— to increase

and improve the productivity and profitability of smallholder dairy farmers, transforming their lives in the process (ACIAR 2018).

Pakistan's expanding dairy sector offered exciting opportunities for trade, cooperation and development between Pakistan and Australia. The export of live Australian dairy cattle to Pakistan since 2007 has laid the foundation for a very successful dairy industry in Pakistan, but it is only the start of the story, there are many more areas where Pakistan and Australia could cooperate to enhance the dairy sector. These include research and development; herd genetics; enhancing milking performance; sophisticated plant and animal breeding programs; pasture and grazing management and, of course, education and training of staff. These observations were made by the Australian High Commissioner HE Peter Heyward. ASLP is an outstanding collaborative development program which adapts Australian farming technology to help alleviate poverty among Pakistani smallholder farmers. It targets improved productivity, marketing of product and employment opportunities.

Prof Qureshi was appointed as Adjunct Professor at Charles Sturt University (2010-2023) with Prof Peter Wynn as his local collaborator. Research experience in stress physiology, especially the interaction between productivity of crossbred cattle under thermal and management stress, was shared with Australian Scientists and Farmers. Pakistani students completed their master and PhD degrees with research on local livestock issues in Punjab and Khyber Pakhtunkhwa provinces. Pak Australia Dairy Project was launched in Punjab in collaboration with the provincial government and Charles Sturt University Australia.

Biennial series of International Conferences

DSP I – 2011 Peshawar

The First International Conference and Industrial Exhibitions on Dairy Science Park was held on November 21-23, 2011 at the University of Agriculture Peshawar (UAP), with the theme, "Developing a hub of dairy enterprises in the flood affected regions of Khyber Pakhtunkhwa through partnership of academia, government, entrepreneurs & civil society" (DSP 2011). Cooperation was provided by the Extension and Research wings of the Livestock and Dairy Development, Pakistan Veterinary Medical Association and Livestock Trainers and Consultants as organizing partners. HEC assisted as the main sponsor, followed by financial assistance of Alltech Pakistan Ltd, Ghazi Brothers, Karachi: Inter-cooperation (IC) Pakistan, Peshawar. ICI Pakistan and Naseem Traders/Romer Lab Rawalpindi also displayed their products through stalls. Technical support was provided by ICRISAT India, SMEDA Peshawar, KPCCI, Charles Sturt University, NSW, Australia and Agri Livestock Bureau, Faisalabad. Website coverage was provided by UAP, Engormix.com, World Veterinary Year, 2011; World Vet Association; Int Soc Zool Sci; IBKRC Philippines; The Dairy Site News; Khyber Pakhtunkhwa Official Gateway News and Events. pakissan.com. Press coverage was provided by Daily Mashriq, Daily Aaj; Daily Pakistan Observer; The Frontier Post; Business Recorder; Associated Press of Pakistan and the Weekly Technology Times, Pakistan.

The conference was attended by +450 delegates from all four provinces of the country and Azad Jammu and Kashmir belonging to a variety of segments of the society. During the three days of the workshop,

experts from academia, research, extension and industry, policy makers and farmers' community presented 35 papers and exchanged ideas to work out a comprehensive plan for the development of the dairy industry of the province. The workshop was inaugurated by the Honorable Minister for Agriculture, Arbab Muhammad Ayub Jan and concluded by Haji Hidayatullah Khan, Minister for Livestock.

Ninety-one Abstracts and 13 titles were published in an abstract book, ISBN-978969-422-001-7. Another volume of the book was published covering recommendations, daily proceedings and pictorials. Fifty selected papers were published as a special supplement of the Journal of Animals and Plants Sciences. A committee shaped up the recommendations into various components including Business Support, Infrastructural Support, Legislative and Policy Support, Animal Production Support, Animal Health Support, Environment and Energy Solutions, Institutional Strengthening and Coordination.

DSP II – 2013 Peshawar

The Second International Conference and Industrial Exhibition on Dairy Science Park was organized in 2013, Nov 18-20, focusing on developing the enterprising capacity of livestock and poultry farmers of Pak-Afghan Region for meat production (DSP 2013). The Conference was attended by 500+ members. The Higher Education Commission was the main sponsor supplemented by other sister and development agencies and private companies. Papers were presented during 9 sessions by speakers from various parts of the country, 6 faculty members from Kabul and Nangarhar University Afghanistan and Dr Mithat Direk from Selcuk University, Turkey. 200 abstracts were published in the proceeding book with ISSN number.

A recommendation committee compiled their findings and were shared for implementation by various relevant stakeholders, mainly focused on business incubation and development of the required infrastructure and services. A roadmap for implementation of the Park as a Center of Excellence was agreed by the Higher Education Commission.

Farmers' perceptions were accommodated as follows:

1. A draft report was prepared by Mr Azam Shah, Dairy/Sheep Farmer/Ex-member Federal Livestock Board and presented in his inaugural paper during the Livestock Development and Business Session of the Dairy Science Park 2013. The same is hereby reproduced by the Chief Organizer, Prof M Subhan Qureshi as follows.

2. Pakistan's livestock sector could not succeed in utilizing its economic potential up to an optimum level due to no integration of facts into national development agenda like contribution of the sector to GDP up to an extent of 12%, 55% being within the Agriculture Sector. Khyber Pakhtunkhwa being a hilly, arid or mountainous terrain, is suitable for meat production, rather than dairy. However, it could not be integrated into the policy, despite the fact that livestock assets in the country exceed Rs.1000 billion.

3. Although the sector is ignored at policy level, it still showed an appropriate growth rate of 3.5%, mainly achieved on the basis of interest of the farming and business community at informal level.

4. Majority of livestock holdings belong to low socioeconomic class, falling below poverty line; possessing livestock heads but not the required land. They can be easily shifted to a status of

entrepreneurship through research, development and marketing support, alleviating their poverty and producing surpluses for the export sector.

5. The livestock farmers are living under a primitive system, with the worst type of practices. Integration of scientific practices and marketing backup will increase their income several fold, leaving a visible impact on the national economy.

6. A hostile pricing system is preventing growth and development of this sector. The controlled prices of products and uncontrolled prices of farm inputs make the business vulnerable, leading it to total collapse under certain circumstances. The local government authorities must understand that the price of a buffalo in 1990 was Rs. 1,000 and milk price was Rs.10. Presently the two figures have reached to Rs. 150,000 and Rs.75, respectively. Proportionately the current milk price must not be less than Rs.150, if the government wishes to regulate it; otherwise it must be left free as for inputs. Legislation is needed for supporting the existing farming system and attracting new investment.

7. The trickle down effect of the research and development project up to the grass root level is totally lacking, which needs consideration at policy level. The research is conducted at resource-rich public sector organizations, which does not reflect the real issues prevailing under resource-constrained farmers' conditions.

8. At the time of independence the number of industries was limited; however, the industrialization of the textile sector has enabled it to contribute a significant share to the export sector. Huge loans were granted in the name of Livestock industry; however, these led to defaults which are frequently reported in the print and electronic media.

9. If the government allows the poor people to get resources for developing their livestock holdings into viable entrepreneurs, and develop new ones, it would leave a good impact on the future of the province and performance of the government.

10. Such steps would raise the people of poverty and bring social, economic and political stability in this vulnerable province.

11. The people of the province have always welcomed change. An effort of the Federal Livestock and Dairy Development Board was successful in establishing fattening farms and about 5000 viable units were established. However, the government did not fulfill her commitment and the amount of Rs.6.4 million due to be paid to the farmers was refused. It led to breaking of the Units and herds of the farmers. As a member of the Board I was disappointed and pulled away from it; however, on the request of Prof M Subhan Qureshi I have come back again to share my feelings with you.

12. An international Halal meat market is dealing with a trade of US$ 635 billion; does our province involved in meat production not deserve to get its due share of 10%? Halal Industry Park has been established at Faisalabad; and nobody at top level is noticing the Dairy Science Park established here in this province (KP).

13. A Muslim consumer in any part of the world would be pleased to get Halal meat with Peshawar label; and a farmer in KP would get due return for his/her investment in such case. We can easily make this

dream true through joint efforts. The roadmap of the Dairy Science Park focusing at graduates' entrepreneurship to be supported by the University, the government and the Chamber of Commerce and Industry seems to be a feasible step to harvest the future.

In pursuance to the directive of the worthy Minister for Agriculture and Information Technology during his visit to the University, a meeting of the Mr Ahmad Said, Chief Planning Officer, Dr Sher Muhammad Director General Livestock and Dairy Development and Prof M Subhan Qureshi Dean FAHVS, the University of Agriculture Peshawar was held on 26-10-2013 to discuss implementation strategy for the directive. The participants agreed on:

1. Introducing the business setup by the University graduates in broilers, quails, turkeys and ruminants farming, etc., and seeking the SMEDA support in developing the business further utilizing the latest techniques;

2. Inviting the KPCCI representatives to consider such enterprises for further investment, especially in establishing slaughtering facilities;

3. Launching research at the University on commercial aspects of the meat production and quality control, making the production system competitive at the international markets;

4. Establishing a mini-slaughter house at the University for graduate teaching and launching of postgraduate diploma courses in Livestock Entrepreneurship;

5. Utilizing the resources, skills and knowledge available at the University and the L&DD Department for developing the private sector, enabling expansion and introducing quality control in the production and marketing chain;

6. Supporting the outgoing University graduates during their six-months mandatory internship as prescribed under the Pakistan Veterinary Medical Council Act 1996 through a joint project of the University and the L&DD Department;

7. Providing an enabling environment for establishing a private company by the Department and slaughterhouses in the private sector;

8. Utilizing information technology in linking the enterprises effectively with the Department, the University, services/inputs providers and the International Halal Meat Market;

9. Holding 2nd International Workshop on Dairy Science Park, November 18-20, 2013, at the University in which the public and private sector and the Universities would be participating.

DSP III – 2015 Peshawar

The Third International Conference and Industrial Exhibition on Dairy Science Park was organized on Nov 16-18, 2015, focusing on support to the war-hit economy of Khyber Pakhtunkhwa through self-employment and hygienic food production for local consumers and international Halal Meat Market (DSP 2015). The Senior Minister Mr. Inayatullah Khan inaugurated the Workshop, participated by academic, government and industry leaders, policy makers and farmers, from all four provinces of Pakistan, Azad Jammu and Kashmir, Afghanistan and Turkey. Mr Mohibullah Khan Special Assistant to

Chief Minister on Livestock, Mr Arif Yousaf Special Assistant to Chief Minister on Law and Mr Jaffar Shah Member Public Accounts Committee and Arbab Asim Khan District Mayor Peshawar chaired various sessions, accompanied by Deans and institutional heads from various organizations. Seven technical sessions were held comprising: i) Livestock Development and Business Incubation; ii) One Health; iii) Feed and Food Safety; iv) Animal Health and Technology; v) Poultry Science and; vi) Prospective Dairy Farming and Dairy Products in Pakistan. MoU's were signed by the Dairy Science Park team with Mevlana Exchange Program and Selcuk University Turkey. The Senior Minister Mr. Inayatullah Khan inaugurated the Third Workshop flanked by Prof Zahoor Ahmad Swati, Vice Chancellor of the University of Agriculture Peshawar and Prof M Subhan Qureshi, Dean FAHVS/Chief Patron DSP. Academic, government and industry leaders, policy makers and farmers, from all the four provinces of Pakistan, Azad Jammu and Kashmir, Afghanistan and Turkey, participated in the event.

Seven technical sessions were held comprising: i) Livestock Development and Business Incubation; ii) One Health; iii) Feed and Food Safety; iv) Animal Health and Technology; v) Poultry Science and; vi) Prospective Dairy Farming and Dairy Products in Pakistan. The Sessions were chaired by Prof M Sarwar, Prof Zafar Iqbal, Prof Ahrar Khan and Prof Anas Sarwar from UA Faisalabad, Prof Ashraf from UVAS Lahore, Prof Younas Rana from CVS Jhang, Dr Arfan from PMAS Arid University Rawalpindi, Dr Iqbal Khattak from VRI, Prof M Afzal AUP, and Dr Mithat from Turkey. Delegates from ILRI, L&DD, COMSATS, SMEDA, AJKU, Romer Labs, KMU and AWKUM participated. HEC was represented by Mr Nasir Shah, Director QAA.

As suggested by Dr Mithat Direk, the biannual International Workshops on the Dairy Science Park, will be jointly organized in continuation with those held in the years 2011, 2013, and 2015. The suggested venue for the 2017 conference is Istanbul, Turkey.

DSP IV – 2017 Konya, Turkey

The 4th International Conference and Industrial Exhibition on Dairy Science Park was held on November 1st to 5th, 2017 at Selcuk University- Konya, Turkey. The Conference was organized jointly by the Mayor Konya Municipality, Konya Turkey, Selcuk University Konya, Konya Teknokent, Dairy Science Park Society Peshawar, Women University Mardan, University of Agriculture Peshawar, University of Balochistan Quetta and Government of Khyber Pakhtunkhwa, Pakistan (DSP 2017). Prof M Subhan organized the Conference as Chief Patron DSP and Dr Mithat Direk assisted as Turkish counterpart.

Khyber Pakhtunkhwa, Special Assistant to Chief Minister, Arif Yousaf said, "The scientists in Pakistan and Turkey will work together to organize such conferences and high level consultation for the establishment of technology centers in future. He was addressing the Fourth International Conference and Industrial Exhibition on Dairy Science Park in Konya, Turkey. I would like to thank especially Konya Metropolitan Municipality and Selcuk University for organizing the conference. The conference has attracted participation from 20 countries, including Turkey, Pakistan, Australia, China, Iraq, Egypt, Algeria, Mongolia, Nigeria, Sudan, Bosnia, Gambia, etc. Mr Arif Yousaf assured support of the Government of Pakistan to TechnoPark Mardan and TechnoPark Quetta, for generating entrepreneurship and bringing quality standards in the food value chain in the two provinces.

The inaugural session was followed by the first technical session covering Livestock Production with eight oral presentations. Papers were presented on the use of biotechnology for food security, red meat production in Mongolia, thermal and nutritional stress, neonatal development, semen quality, milk production and meat technology.

On the second day parallel sessions were held in two halls. Hall-A covered session on One Health. Papers were presented on One Health achievements and future vision under Dairy Science Park, antibacterial property of Bacillus, Dairy Sector in Yemen, hypoglycemic effects of Quinolone, dietary interaction and use of plant extracts with dental health and environment-farming interaction. Food Security and Ethics was run in Hall-B, covering Food Security and Ethics. Papers were presented on meat production, role of cooperative farming, fodder production, enzyme technology, extension tools and awareness about food security. Session on Meat and Dairy Entrepreneurship was held in Hall A, covering a review of BRSP, evaluation of livestock production in Celebiler village, milk production around Konya, meat protein, bedding for dairy cows and introduction of farm technologies. After coffee break, papers were presented on workers' safety applications, meat quality, milk production systems and dairy cattle in milk.

Hall-B covered session Animal Health and Technology and papers were presented on therapeutic effects of herbal plants, pathogenomics of E coli, estrous synchronization protocols, anemia, meat emulsion systems and Aflatoxin B in dried meat. Trends in Dairy Technology was another session covering papers on beef patties, cheese mapping, neonatal development, ozone technology, oxidative stress and food security. A session on Small and Medium Enterprises Development was held covering challenges and scope of SMEs in Balochistan, buffalos' entrepreneurship, biotechnology in entrepreneurship, monopolistic marketing competition, sunflower/sorghum silage and eggs production.

Hall-C covered a session on Biorisk Management, covering lab biorisk management, government academia linkages, bovine brucellosis, drinking water quality and antibiotic bacterial resistance.

On the third day of the conference, a session was held on Entrepreneurship Development, covering achievements and future vision of Dairy Science Park, meat technology, mercury – lactation relationship, millet, gamma irradiation of rice and Peshawar Meat.

The delegates of the Fourth International Conference and Industrial Exhibition on Dairy Science Park visited Konya Teknokent on third day of the conference, under the supervision of Dr Mithat Direk. The delegates, more than fifty from Pakistan including others from various countries, visited Konya Teknokent on 3 November; they were excited to know about the achievements made at the Teknokent. Prof Birol, head of the organization, was not available on the day of our visit to Teknokent and we were given a presentation by Mr Mehmet. It was recommended that a TechnoPark will be established at Mardan (TPM), with leading role of Women University Mardan, Dairy Science Park, KP Chamber of Commerce and Industries and SDGs Task Force. Similar TechnoPark will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBK WU. Mission of the two TechnoParks will be utilization of indigenous human and natural resources for welfare of the people through academia – industry linkage, with focus on entrepreneurship development and hygienic food production for local consumption and export. It was recommended that an autonomous TechnoPark, to be

registered as Society under Societies' Registration Act XXI of 1860, will be established at Mardan (TPM) and Swat (TPS), with leading role of Women University Mardan/University of Swat, Dairy Science Park, KP Chamber of Commerce and Industries/SMEDA and Government of Khyber Pakhtunkhwa. Similar TechnoPark will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBK WU and endorsed by Governor Balochistan. The Governor Balochistan and other organizations agreed on the concept during a visit of DSP Team, before DSP IV-2017 Konya. An MoU has been signed with Konya Teknokent for establishment of Peshawar Technopark, Mardan-TechnoPark-WUM-Mardan and Quetta-TechnoPark-BU-Quetta. Konya Teknokent and Dairy Science Park will collaborate in Smart Energy programs, sharing success stories in food processing, quality control and marketing and sharing ARGE activities in Information Technologies, Agricultural Technologies, Biotechnology, Design Technologies, Environment and Energy Technologies and Defense Industries under an MoU DSP-KT signed at Islamabad later on.

DSP V – 2019 Quetta

Fifth International Conference and Industrial Exhibition on Dairy Science Park was held at Expo Center, University of Balochistan on 19-21 Nov, 2019 with the theme: Emerging Trends and Opportunities in the Livestock Sector of Balochistan (DSP 2019). The event was held during the Livestock Expo Balochistan 2019 in collaboration with the Government of Balochistan and Food and Agriculture Organization of the United Nations.

Balochistan Governor Amanullah Khan Yasinzai, Chief Minister Jam Kamal Khan, Commander Southern Command Lieutenant General Waseem Ashraf, Adviser to the Chief Minister on Livestock Mitha Khan Kakar, Special Assistant Mir Ijaz Sanjarani, Balochistan Chief Secretary Fazeel Asghar, UoB Vice Chancellor Dr Anwar Panizai and other officials were present on the occasion.

The Conference comprised the inaugural session, Academia-Industry Linkages and Policy Reforms and Support Packages. Research and review papers were presented on: AOH=Animal Health and One Health; APT= Animal Production and Technology; FRM= Fodder and Range Management; QCH= Quality Control and Halal Practices; BAH= Biotechnology and Animal Health; EDV= Entrepreneurship Development; PST= Poultry Sciences; FRMI= Farming Innovation. The Conference Proceedings were compiled by: Editors: Muhammad Azam Kakar, Sania Subhan Qureshi, Tauseef Asmat, Zahid Mustafa, Mahboob Ali, Muhammad Masood, Tariq Kiani and Muhammad Subhan Qureshi. Abstracts were published (ISBN-978-969-422-001-7; website: http://dairysciencepark.org).

Dairy Science Park Balochistan Chapter was established consequent to a meeting of stakeholders from the Academea, Industry, Government and Civil Society. The meeting was held on the sidelines of Balochistan Livestock Expo 2019 inaugurated by Mr Arif Alvi, President of the Islamic Republic of Pakistan. Mr Jam Kamal Khan Chief Minister and Mr Dosain Jamaldini Secretary Livestock pursued the arrangements aggressively.

Livestock Entrepreneurship Development Initiative (LEDI) was launched as a model of good governance pursuing the Academia-Industry-Society-Government Nexus at Chamber of Commerce and Industry (CCI). The Initiative would be implemented by Dairy Science Park Balochistan Chapter (DSP-BC) as a

follow up mission of Balochistan Expo 2019 inaugurated by Mr Arif Alvi, President of the Islamic Republic of Pakistan, pursued aggressively by the Chief Minister Jam Kamal Khan and Secretary Livestock Mr Dosain Jamaldini.

The decision was made after extensive deliberations in a meeting of stakeholders of livestock sector, held at Quetta CCI, headed by Mr Badruddin Kakar President CCI and attended by representatives of public and private sectors from Balochistan. Ms Rubina Shahwani and Dr Fayaz coordinated the proceedings. Prof M Subhan Qureshi President DSP and Dr Shahzad N Jadoon Alltech Pakistan briefed the house on the modality of interaction between the government and private sector. Dr Shabbir Cattlekit-PATTA offered support to the industry. Qazi Ayaz represented Talha Enterprise.

DSP VI – 2023 Bahawalpur

The Sixth International Conference and Industrial Exhibition on Dairy Science Park was held at the Islamia University Bahawalpur (IUB) on March 20-21, 2023 (DSP 2023) with the. theme set as “Parallel Social Enterprise for the Vulnerable.

DSP2023 was inaugurated by Prof Naveed Akhtar, Pro-Vice Chancellor IUB. Prof M Subhan Qureshi, Conference Chair; Mr Muhammad Anwar Kamal Saleem Hashmi, Co-Chair; Dean FVAS IUB, Prof Muhammad Khalid Mansoor Khalid, Secretary General; Prof Illahi Bakhsh Marghazani, Secretary Technical and Dr Muhamad Shahzad, Secretary Coordination, played their major roles in organizing the event. Ijaz Mehood Gorsi, DG LDD South Punjab participated in the session in addition to delegates from various public and private sector organizations of the country and abroad.

The Vice Chancellor University of Agriculture, Dera Ismail Khan, Prof. Dr. Masroor Elahi Babar chaired the first first technical (keynote) session and presented his paper on “Power of Genomics for Camel Improvement”. Dr Mithat Direk presented a paper on “Evaluation of the Dairy Industry in Türkiye”. Prof M Subhan Qureshi and Dr M Saqib presented their papers on Good Governance and Q-Fever.

The Technical Session II (Business Support) was chaired by Sardar Ahmed Mujtaba Khan Rind and participated by MAK Hashmi, Dr Zafar Siddiqui ISRA University, Syed Irfan Shah Khagga Planet Earth Community, Dr Abdur Rahman PSA&E-Village, Mr M Ismail Tax Consultant and Prof M Subhan Qureshi. Issues faced by the private sector and importance of academia industry linkages were highlighted. Entrepreneurship Development initiatives were covered under Group Discussion.

Technical Session III, chaired by Dr Mithat Direk, commenced with a video presentation by Dr Mortaza Bitaraf Sani from Iran on genetic evaluation of camels. Several emerging scientists from various universities presented their research work along with recommendations for field application of their technologies. Technical Session IV (Camel Farming and Pastoral Values) was coordinated by Dr Muhammad Shahzad. Christina Adams from USA presented a film on “Autism Spectrum Disorder (ASD) and Camel Milk” followed by her video lecture on “Global Perspective on Pastoralists’ Value to Biodiversity and Human Health”.

The Industrial Exhibition attracted various stalls related to the livestock and poultry industry that were of most interest for the farmers and veterinary professionals. Total Nutrition, Aptly Pharmaceuticals, Ghazi

Brothers, Dasan Feeds, UM Enterprises, Cloud Agri Pakistan, Leaders College Bahawalpur, GreenWend Energy and Dairy Science Park. The Concluding Session was chaired by Mr. Nasir Jamal Hotiana, Secretary, Livestock, South Punjab. He distributed certificates and shields among the farmers and organizers of the conference.

Sardar Ahmad Mujtaba Khan Rind facilitated the conference organizers to visit Derawar Fort and his land holdings adjacent to the Fort within the limits of 20 km, which he has already offered for establishing facilities for academia-industry-government linkages. On the way to the Fort, Cholistan University of Veterinary and Animal Sciences was visited. Dr Qudratullah facilitated the visit. The Departments of Clinical Medicine and Surgery, Theriogenology, Parasitology, Microbiology, Livestock Management, ABG, Nutrition, Zoology and Continuing Education and Extension, were visited. Discussion was held among the students, faculty members, farmers and the civil society activists regarding collaborative initiatives. DSP Southern Punjab Chapter and a Livestock Business Support Center (LBSC) would be established at CUVAS as envisioned under the consultative process of DSP made with FAO and ITC-UN.

Biorisk Management

The Netherlands Meeting:

A collaboration on "Biorisk Management" is in process with the Sandia National Laboratories (SNL) USA. A four-member delegation of the Park visited the Netherlands on March 15-18, 2015 for launching the initiative. The tour was sponsored by the United States Department of State's Biosecurity Engagement Program and Sandia National Laboratories. The One Health concept is based on the recognition that human and animal health are inextricably linked. SNL was represented by Dr Melissa Finley and Mr Robert Otero and DSP by Prof M Subhan Qureshi, Prof Sarzamin Khan, Prof Umer Sadiq, Dr Shakoor Ahmad and Mr Imran Khan. A presentation was made by Prof M Subhan Qureshi, covering the livestock production system in the Khyber Pakhtunkhwa province and FATA regions of Pakistan, rich in natural resources but hit by extreme poverty.

The livestock and poultry farming system are lacking quality control standards and lack of access to modern practices have an adverse effect on the profitability of these operations economically. Similarly, the processing facilities and marketing outlets are run without quality control practices and any documentation for traceability. The Doctor of Veterinary Medicine degree program is focusing on treatment of diseases and lack appropriate concepts on Biorisk Management. The SNL delegates desired to collaborate with the Dairy Science Park in establishing a Center of Excellence on Biorisk Management.

The Dubai Meeting:

A 9-members' delegation of DSP and a 4-members' delegation of Sandia National Laboratories USA met in Dubai to hold the Pakistan Biorisk Management Curriculum Workshop on May 21-25, 2016. SNL was represented by Dr Melissa Finley, Veterinarian; Iris Shurdhi, Development Expert; and Giulio Mancini (Global Security Expert). DSP was represented by Prof M Subhan Qureshi, Chief Patron; Prof Sarzamin Khan, Chief Technical Advisor; Engr Irfan ul Haq Qureshi, Chief Executive; Prof Umer Sadiq, Advisor One Health; Mr Nasir Shah, Advisor Higher Education; Mr Rashid Aman, Expert Entrepreneurship; Dr Shakoor Ahmad, Expert Quality Control; Ms Sadia Qureshi, Expert Halal Food; and Ms Samina Qureshi, Expert

Economics (Guest Participant). The DSP participants belonged to the University of Agriculture, Peshawar, Higher Education Commission of Pakistan, SMEDA, and the Private Sector.

The Workshop concluded that the curriculum in practice in various universities of Pakistan under the supervision of Higher Education Commission of Pakistan needs to be mapped and reviewed for presence of Biorisk Management contents or availability of a full-fledged teaching program at the undergraduate or graduate levels. Keeping in view the importance of the subject, the participants recommended that Biorisk Management may be given appropriate consideration while developing teaching programs at national level.

The Bangkok meeting:

Mr Arif Yousaf, Special Assistant to the Chief Minister on Law, Government of Khyber Pakhtunkhwa, Pakistan, who is also representing the province as a member of Task Force on SDGs, led a 15-members' delegation of Dairy Science Park Peshawar to attend a consultative workshop at Bangkok, Thailand from 12 to 19 November, 2016. Prof M Subhan Qureshi Dean FAHVS/Chief Patron DSP, The University of Agriculture, Peshawar, Pakistan; Prof Umer Sadiq, Prof Sarzamin Khan (UAP), Dr Zia ul Haq (KMU), Mr Nasir Shah (HEC) and Engr Irfan ul Haq (DSP) and Mr Kamran Khan (farming and industry) represented DSP. The workshop focused on Curriculum Development for Pakistani and regional universities and was sponsored by the Sandia National Laboratories USA.

The workshop evaluated the biorisk management contents of curricula in place at various universities. Recommendations were prepared for standardizing the courses and accommodating the concerns of the local livestock/poultry farming, products processing, marketing and quality control systems present in the region.

The Phuket Meeting:

An awareness workshop was held at Phuket, Thailand, participated by experts of Dairy Science Park (DSP), Peshawar, Pakistan and Sandia National Laboratories (SNL), Albuquerque, NM, USA. The meeting was held from 19th to 21st April, 2017. The workshop focused on awareness of the policy makers about the biorisk management (BRM) concepts and identifying the areas of interventions into the functions of government, academia and private sector organizations, with special focus on documenting and improving the status of biosafety and biosecurity associated with laboratory operations, clinics and the human food chain. In addition, the integration of Biorisk Management Curriculum into the existing curricula of Pakistani Universities and development of new courses with the coordinated efforts of the federal and provincial governments, private sector and civil society were considered.

During various presentations, the participants discussed the issues in detail and suggested measures through collaborative efforts of all stakeholders to be led by DSP-SNL partnership.

The Colombo Meeting:

A delegation of Dairy Science Park (DSP), The University of Agriculture, Peshawar, Pakistan completed their consultation on Biorisk Management (BRM) with Sandia National Laboratories (SNL) USA at Colombo, Sri Lanka. The delegation of DSP was led by Mr Arif Yousaf, Special Assistant to Chief Minister

on Law/Convener Task Force on Sustainable Development Goals, Government of Khyber Pakhtunkhwa and comprised Prof M Subhan Qureshi Chief Patron DSP, Prof Nazir Ahmad Dean FAHVS, Prof Umer Sadiq, Dr Shoaib Sultan, Dr SB Khan, Dr Farhan A Khan, Dr Hamayun UAP, Prof Ghazala Yasmeen VC WUM, Prof Azam Kakar World Bank, Mrs Javed Farmer Sausage Co, Irfan Qureshi and Sadia Qureshi DSP, M Inam SBBU Sheringal, Dr Arshad PVMC, Prof M Rabbani UVAS and Dr Tayyab KMU. The Sandia team comprised Dr Melissa Finley, Mr Waleed Joyan and Ms Iris.

A BRM Package was developed for integration into DVM curriculum at Pakistani Universities under the supervision of Pakistan Veterinary Medical Council. The draft has been uploaded at https://dairysciencepark.org/special-reports/.

The Konya Session:

The Biorisk Management Session was held during the Fourth International Conference and Industrial Exhibition on Dairy Science Park at Selcuk University Konya, Turkey in November 1-5, 2017. The session was managed by: Chairman: Prof. Dr. Ghazala Yasmeen, Vice Chancellor, WU Mardan, Pakistan; Co-Chairman: Prof. Dr. Yılmaz Bahtiyarca, Selcuk University, Konya, Turkey; Moderator: Rifat Ullah, AUP, Pakistan. Seven papers were presented during the session.

The Amman Meeting:

A delegation of Dairy Science Park attended a workshop on the Use of Research Methods and the Role of Molecular Biology, hosted by Sandia National Laboratories (SNL, USA), in Amman & Irbid, Jordan from 29 April to 1 May 2018. Dairy Science Park, University of Agriculture Peshawar was represented by Prof M Subhan Qureshi, Chief Patron DSP, Prof Nazir Ahmad Dean FAHVS, Prof Umer Sadiq Chairman Animal Health and Dr Farhan Anwar Assistant Professor. Prof Masood Rabbani represented UVAS Lahore and Prof Zafar Randhawa, Dr Tariq, Dr Faqir Muhammad, Dr Kasib and Dr Shafia represented UA Faisalabad. Dr Melissa Finely and Dr Lynn Fondern represented SNL.

On the first day a review of the training workshops and basic concepts of biorisk management was presented by Dr Melissa Finley and Dr Lynn. It was followed by a review of the facilities and strength of the three Pakistani Universities and Dairy Science Park regarding availability of manpower, laboratory resources and academia industry linkages. The missing links and gaps were identified, with special reference to the availability of molecular biological techniques at these institutions. On the second day the Princess Haya Biotechnology Center (PHBC), MENA Biorisk Management and Genomic Training Division (BRMTD), Jordan University of Science and Technology, Irbid, was visited.

The Dubai Meeting-II:

A Workshop was held at Dubai on Biorisk Management, organized jointly by the Dairy Science Park Peshawar, Sandia National Labs USA and Pakistan Veterinary Medical Council Islamabad. This was the eighth event of the series held at different locations around the World. BRM contents were developed for integration into DVM degree curriculum at Pakistani Universities. Participants from Sandia National Laboratories included Dr Melissa Finley, Mr Waleed Joyan and Ms Iris Shurdhi. Delegates from Pakistan comprised Deans and senior faculty members from the DVM degree awarding institutions of Pakistan;

senior civil officers of the federal and provincial governments, Pakistan Veterinary Medical Council and Dairy Science Park.

Lectures were delivered by the resource persons from Sandia Laboratories USA and President PVMC. BRM related issues prevailing in the field were reviewed. Integration of the BRM contents into the DVM curriculum, already developed at Colombo and refined in the Deans meeting in Pakistan, were discussed in detail in three groups. Final draft was presented on the third day for integration into DVM Curriculum. Prof M Subhan Qureshi suggested establishment of BRM Alumni Association as the eight workshops jointly organized by SNL, DSP and PVMC have trained a good number of persons who may play their due role in integrating BRM concepts into the Food Value Chain in Pakistan.

Market Oriented Production Strategy and Business Incubation

Business Incubation is the only remedy for entrepreneurship development on modern lines and to make it compatible with the market demands, consumers' preference and acceptability of the community and cultures. The University of Agriculture Peshawar, has tried its best to develop such models through university-industry interaction as business incubation models, under deanship of the author for two tenures. Postgraduate thesis research was redesigned to meet expectations of the industry and civil society and train the postgraduate scholar as a scientist as well as a potential entrepreneur.

The present farming system comprises small scale subsistence activities in the rural areas, or opportunity cost-based traditional family farming, mostly inherited from forefathers, in the peri-urban areas. The farmers are mostly illiterate with no awareness about their own health, animal health or impact of their farm products on public health. Dairy buffaloes are usually kept under the peri urban dairy farming system, with few crossbred dairy cows.

Quails have been introduced in the region through various non-government organizations in cooperation with the University of Agriculture Peshawar. Master and PhD theses were produced on various issues of quails' fertility, hatchability, growth and stress management (DSP 2016). Through the reshaped postgraduate research, the Poultry Science Department of the University successfully came up with several entrepreneurship models under a revolving fund. Various poultry birds were studied including quails. Several studies were conducted under a revolving fund, to investigate the feed conversion ratio, supplementation of antioxidants, growth pattern, breeding efficiency and effects of aflatoxins on economic parameters and other aspects. It was concluded that AFB1 is capable of inducing clinico-biochemical reactions and alterations in different organs when fed to quails in different concentrations.

A study on the effects of organic acids on the performance of Japanese quails found that net return was significantly higher by the supplementation. Two studies were conducted to investigate efficiency of artificial insemination and identification of a suitable extender and their effect on quail eggs fertility. AI showed good results in Japanese quails in terms of least fertility related problems as compared to natural mating. Proctodeal gland foam extender was found to be very effective for fertility, hatchability, sperm motility, and concentration. In addition, it was economical, in terms of cost per chick.

Analysis of the data generated on quails at the Department showed that a rolling fund of Rs. 400,000 generated Rs. 42,000 per month which is an excellent entrepreneurship model for the region.

Nutrition is mostly imbalanced, not meeting the protein, energy and mineral requirement in dairy buffaloes (Qureshi et al, 2002). The low yielding buffaloes usually get higher protein intake in the form of cottonseed cakes. The excess protein has to be gotten rid through conversion of ammonia in the rumen and urea in the liver, which is an energy consuming process. As such the farm expenditures go up; milk yield and fertility of animals comes down and immunity of the animal is compromised.

Rebreeding is usually avoided due to fear of decline in milk yield. It has been found (Khan et al, 2009) that this fear is baseless and appropriate feeding management may maintain higher milk yield and fertility in a sustainable manner. Artificial insemination has failed to find a place in breeding of the buffaloes.

The traditional peri-urban farms keep running through loans from the livestock or feed dealers, with meagre net profit having no plan for horizontal expansion or quality improvement. The per head milk yield is low (about 10 liters) and cost per unit productivity is higher (Rs.90). These farms lack the resources for living a graceful life in the society, in spite of huge investment, e.g. Rs.5-10 million on establishing the Unit. New generation of the farmers and certain educated young persons have adopted dairy farming using the crossbred dairy cows.

Such farmers are adopting new technologies for managing feeding, breeding and health of animals. They are getting higher per head milk yield (about 30 liters) and have got linked with the marketing system, sometime after processing and packaging their products. However, some issues of animals' health, productivity, fertility, feed quality, price capping and taxation faced by these farmers, needs to be addressed and have been covered under this Action Plan through establishment of the Livestock Technopark Peshawar and Livestock Business Facilitation Centers.

The remotely located sheep and goats' farms are also run without adopting improved management and feeding practices or concepts of profitability. Sheep and goats are located in the arid, hilly or mountainous terrains in the Khyber Pakhtunkhwa including the tribal areas. The fodders and water availability is usually difficult and the farming system is sedentary, transhumant, nomadic or migratory. About 60% of the goats' population is kept in units of more than 30 animals. Sheep population of about 40% is kept in flocks of 50 to 350 animals. Under such a situation, these production activities are not considered graceful, profitable or sustainable.

The product's quality coming out of unhygienic facilities would not be considered safe for human consumption and hence, face hurdles in local, national and international marketing. They have no say in matters like price fixation, quality control, policy formulation or project implementation. This Report, however, improving the governing system and practices at these farms, would enhance the profitability and sustainability of the units.

The essential assets are available with the farmers in the form of sheep, goats, cattle, buffaloes, camels, poultry, quails and even ostrich. The farmers have got the basic skills in farming and management of health, breeding and feeding of animals. There is a need to convert these valuable assets into viable

entrepreneurship models. The proposed Livestock Technopark Peshawar would facilitate Academia-Industry interactions to develop feasible entrepreneurship models through introducing good production practices in the production system, improving the health and immunity of animals, decreasing the per head productivity costs, ensuring traceability of animals and products, providing disease diagnostic, therapeutic, quality control and laboratory services through public and private partners, availability of high quality animals and farm inputs, sale of surplus animals and farm products, insurance in case of farm losses and addressing other associated issues. The efforts of the Park would be supplemented by LBFCs and other regional bodies.

Facilitating Agribusiness Linkages

Khyber Pakhtunkhwa province, although rich in natural resources, face issues like unemployment, terrorism and lack of access to quality foods. The cover picture of this Action Plan reflects the DSP Good Governance Model for livestock technoparks, founded on the six SDGs; initiated through on campus development of entrepreneurship models; supported by extension and research wings and industry/civil society for building the entrepreneurship network; leading to Halal food export.

Mr Kamran Khan, an animal husbandry graduate, may be presented as a successful entrepreneur. He adopted his professional knowledge as a source of livelihood for his family. He is a source of relief for the farming community, a Beacon of Hope for the young generation and a sign of relief for the quality conscious food consumers in the city.

Presently, the livestock and poultry farmers face difficulty in connection with service providers, especially the fair marketing dealers. Health issues are usually chronic and the low quality of medicine, under-dosing of antibiotics, therapeutic approach of the veterinary practitioner instead of preventive, poor housing/ventilation and lack of hygienic practices affect the farm profit adversely. The dairy, fattening, poultry and fish farmers are usually afraid of animal health issues. Very few veterinary practitioners find popularity among the farmers' community, based on their performance and contribution in combating animal health issues and raising farm profitability and sustainability. The farmers usually consult veterinary practitioners in case of severe disease outbreaks and mortality of animals. This is called fire brigade treatment and is a source of income for the veterinary practitioners and input suppliers. The farmers fail to realize the hidden losses at their farms due to under and overfeeding, toxic feeds, parasitic infections, infertility and other issues of economic importance.

Vision of Livestock Technoparks

Dairy Science Park came up with the idea of establishing Livestock Technoparks (LTs) in Pakistan and elsewhere after visiting the Koya Teknokent during the DSP VI - Konya 2017 and interaction with the relevant experts there. An LT would be an autonomous body with regulatory, financial and administrative powers, supervised by a Board of Governors having members from the relevant public and private sector organizations and supported by an Endowment Fund focused at establishment of a network of Entrepreneurship Models across livestock value chain. LTs would be introduced as a triple-helix good governance model of academia-industry-government nexus.

Generally, the Livestock Technopark Peshawar will engage and train the DVM unemployed graduates as well as in service veterinarians to visit the registered farmers on monthly basis for observing the animals' health and productivity cases with special emphasis on the hidden losses due to bad hygiene, parasitic infestation or toxic feeds. The veterinary practitioners will act as animal healers, public health protectors as well as economy boosters. All the three aspects would help the farmers to get maximum benefits out of minimum investment, producing milk, meat and eggs with the qualities of accepted standards, through our registered labs. Engineering, medical, business and other graduates in natural and social sciences would be motivated to establish services in their respective areas.

LDD Ext Department would be engaged in developing special training modules for entrepreneurship development. They will host the Policy Implementation Cell and collaborate with LTP and its regional bodies. The hospitals would be utilized for shifting their therapeutic approach in disease control towards preventive and business advisory one. The outdoor cases would be encouraged and institutional based practice would be allowed on the analogy of medical doctors provided under Khyber Pakhtunkhwa Medical Teaching Institutions Reforms Act, 2015. The veterinary doctor would utilize his skills as animal healer, public health protector and economy booster. The Policy Implementation Cell would help in farming innovation and commercialization, providing an enabling environment for entrepreneurship development. New breeding innervations would be developed and introduced for enhancing growth rate, fertility and fecundity of animals.

LDD Res would work on applied research to control diseases, vaccine improvement and commercial production and advanced research in collaboration with the universities. They would help in Biorisk Management research and development in collaboration with Khyber Medical University and University of Agriculture Peshawar. They will host Livestock Technopark Peshawar and LBSCs at Peshawar Kohat and Abbottabad and collaborate with LBSCs at other locations.

The Directorate General would appoint a Focal Point Livestock Technopark Peshawar to support improvement in livestock markets and slaughter houses and in implementation of the joint ventures with Munir and Co Slaughter House, Ring Road Peshawar. Directorate General Fisheries would host LBSC Fisheries and would implement the fisheries components of the functions of Livestock Technopark Peshawar.

UAP would utilize the human resource base available in the form of highly qualified faculty members and enthusiastic postgraduate students for responding to the emerging industrial issues and developing entrepreneurship models. The Livestock Business Support Center at UAP would be utilized extensively through international linkages, especially under an MoU with the Konya Technopark, Turkey and other organizations developed under Dairy Science Park.

The universities would contribute as follows: i) Swat University would host the LBSC Swat; ii) AWKUM will host LBSC Mardan; iii) WUM will host Dairy and Meat Technology Center; iv) Gomal University will host Gomal Technopark; v) Khyber Medical University will host BRM Center; vi) The University of Agriculture Peshawar will host LBSC UAP and; vii) SBBU Sheringal will host meat technology center.

Livestock and poultry farmers are provided feeds, semen, medicine and other farm inputs by commercial companies. Most of the times these inputs are not quality tested, nor cost-effective. The feed companies supply feeds and their salesmen convince the illiterate farmers to feed the animals more and more. And as mentioned already in this document, this leads to excess intake of proteins, leading to ammonia and urea toxicity and losses in milk productivity, fertility and profitability of the farms.

The Board will test the farm inputs in various partner laboratories and the per unit productivity cost would be determined. Cost effective farm inputs would be made available at the Livestock Business Support Centers and other associated facilities. Feeds would be tested for nutrients availability and toxins presence through laboratory analysis and through growth, fertility and productivity trials, Semen would be tested for fertility and genetic potential through field trials at registered and experimental farms, engaging postgraduate students.

Marketing linkages are most of the times hostile to the farmers, be it livestock or poultry farmers. Animals are purchased from contractors or feed/milk dealers on loans to be paid in installments. The mark up rate usually goes beyond 100% per annum. And the lenders sometimes take back animals or even families of the farmers, if he is unable to pay back the installments. In case of peri urban buffaloes dairy farming, the freshly parturited buffalo is purchased at about Rs. 200,000 and after getting milk for six months, the animals are sold back at Rs. 70,000. Weekly cattle markets are held at various popular locations of public gatherings. The LTP would devise a marketing mechanism for keeping dry animals at remote areas with little running cost, as salvage farming and newly pregnant animals would be kept at such stations for supply back to the peri urban dairy farms.

Peshawar Meat was established as an entrepreneurship model for providing Hygienic and Halal tested beef and mutton to Peshawarites. It could not survive due to price capping form meat by government, lack of animals supplies to the factory and lack of sale points. The specially prepared beef through rearing calves, has to compete with culled old buffaloes at the end of lactation, or diseased and injured animals. The production cost of such animals is far lower while the production of prime beef would cost at least double this amount. However, the prices of beef and mutton are fixed at flat rates, irrespective of qualitative grading. Such a practice discourages growth and survival of young entrepreneurs, struggling for finding a graceful living in the society, while the shops with unhygienic and low quality products go on working in an uninterrupted manner.

Entrepreneurship Network

Establishing a network of entrepreneurship would solve the issue. A farming entrepreneur would be producing cost effective quality products to the factories, he will get inputs from the quality tested, registered suppliers, registered vets, analytical labs and other service providers; and he will supply his products to the registered factories and products marketing dealers. There would be a win-win situation for everyone. New graduates would find it easy to enter the chain at any point of the entrepreneurship network. Buffaloes are brought to major cities of the province from Punjab and sent to slaughterhouses after getting milk for a few months. It drains the genetic potential of buffaloes towards trash and puts financial burden on local farmers, purchasing a fresh buffalo at higher rates. Establishment of salvage

farms for rearing and caring of dry animals in remote areas of the province would prevent the animals from slaughtering and maintain the genetic pool of best breeds of livestock population. Establishment of model dairy farms for the purpose of extension, research and business demonstration at regional level under partnership with the private sector, would popularize the innovative farming models in the province, for further replication. Establishment of modern slaughterhouses with advanced facilities through joint ventures will ensure the production of quality meat to the consumers and to be used for research purposes targeted at meat industry expansion and provision of Halal Meat to the entire Muslim community.

Policy Reforms

Dairy Science Park has been interacting with the farmers, processors, academicians and government representatives regarding policy reforms across livestock value chain (Business Recorder 2011; 2013; 2014; 2016; 2016a; 2017; 2017a; 2023).

Economic constraints and low social status of farmers are the biggest obstacles in manufacturing of dairy and livestock products. Despite the highest position of Pakistan in milk producing countries in the world, farmers are unable to improve breeding level in the country. These views were expressed by speakers during the opening session of two-day international workshop on "Dairy Science Park," organized by KP Agricultural University here in collaboration with Sarhad Chamber of Commerce & Industry, Small & Medium Enterprises Development Authority and other business stakeholders. The Minister for Agriculture, Arbab Ayub Jan formally inaugurated the workshop. Notable speakers on the occasion included Acting Vice Chancellor of the university, Professor Dr Mohammad Naeem, Dean Faculty of Animal Husbandry & Veterinary Sciences, Professor Dr M Subhan Qureshi, and former dean of the faculty, Dr Ghulam Habib. Arbab Ayub said that the dairy and livestock sector has an integral part in development, while the province is totally dependent on the Agriculture sector because of slow growth of industrialization. He stressed the need for promotion of research culture in educational institutions, saying research is considered the mother of the agriculture sector.

The Faculty of Animal Husbandry and Veterinary Sciences held a meeting here with members of Khyber Pakhtunkhwa Chamber of Commerce & Industry (KPCCI) and private sector with President, Zahidullah Khan Shinwari in the chair. During the meeting the Dean, Faculty of Animal Husbandry and Veterinary Sciences, University of Agriculture Peshawar (UAP, Professor, Subhan Qureshi) gave a detailed presentation on Dairy Science Park. Replying to a question the Dean informed the private sector that Punjab is best suited for dairy production. However, the Khyber Pakhtunkhwa, mostly consisting of hilly terrain and arid regions can support meat production through sheep and goats, cattle and buffalo in some regions. Small poultry farming has been adopted as a small business, which needs support to produce quality feed at competitive rates. Huge investment in the sector must be made after appropriate feasibility studies in a phased manner. Speaking on the occasion, the President KPCCI highly appreciated the presentation and realized the potential of the sector playing its due role in eradicating poverty and creating employment opportunity. He supported the proposal of the Dean for establishing an internationally accredited quality control setup at the university supported with commercial research for local consumption and export certification of livestock and poultry products.

Khyber Pakhtunkhwa Senior Minister Ikramullah Khan Gandapur inaugurated the Livestock Business Facilitation Desk of the Dairy Science Park at the KP Chamber of Commerce and Industries (KPCCI), Peshawar. During the inaugural ceremony, Zahidullah Shinwari, President KPCCI; Prof M Subhan Qureshi Dean Faculty of Animal Husbandry and Veterinary Sciences (FAHVS), the University of Agriculture Peshawar; Javed Hashmat, Chief Executive Officer, KP Board of Investment and Trade; Nasir Shah, Higher Education Commission; Gul Kiaz Bank of Khyber; Dr Umer Sadique Chairman Animal Health UAP, Hafeez ur Rahman President Sarhad Dairy Farmers Association; Dr Imdadullah Director Livestock and Dairy Development Department KP, Rashid Aman SMEDA/ITAC office, and heads of farmers organizations.

Bureaucrats are not ready to accept the innovative Dairy Science Park (DSP) floated by an academician for the development of livestock sector, achieving the goals of hygienic/halal food for local consumption an export of US$ 2 billion and to generate self-employment through entrepreneurship, involving academia, public and private sectors. The concept prepared by Dr Subhan Qureshi, Dean, Faculty of Animal Husbandry, University of Agriculture Peshawar recommends the establishment of an economic power house to register and regulate the livestock sector. For this purpose, Dr Subhan Qureshi has also proposed the establishment of an independent and autonomous Board of Directors (BoD) to run the affairs of the park. The Secretary Local Government, Elections & Rural Development (LG&RD), Khyber Pakhtunkhwa has appreciated the concept as an innovative idea and wrote an assenting note to the Chief Secretary for the establishment of Dairy Science Park (Academic support to livestock SMEs under the initiative for inclusion in the proposed annual development program (ADP) for the financial year 2016-17. Similarly, the Additional Chief Secretary, Mohammad Azam Khan in his written note for the Chief Secretary also appreciated the innovative idea of the Local Government Department regarding establishment of Dairy Science Park at Peshawar to provide hygienic food production to the whole province.

A Task Force was suggested to be established as a temporary arrangement for establishment of the Dairy Science Park (DSP) Board in light of a wide-based high-level meeting chaired by the Senior Minister reflected in the note of Secretary Local Government, Elections and Rural Development, Government of KP. The decision was made in a presentation by Prof M Subhan Qureshi, Dean FAHVS, UA Peshawar/Chief Patron Dairy Science Park. The Honorable Senior Minister during a previous meeting of the representatives of the Department of LGE&RD, L&DD, PDA, University of Agriculture Peshawar and the private sector, held on 3-3-2016, directed for: i) implementation of the ADP project worth Rs.200 million for establishing a modern slaughter house; ii) supporting academic component of DSP for SMEs and; iii) formulation of DSP Board through an Act of the Provincial Assembly.

Pursuantly, the Secretary LGE&RD initiated a summary for the Chief Secretary which was appreciated as a novel idea by the ACS however, it was turned down by the Secretary Agriculture. The Task Force would be helpful in mobilizing the provincial livestock resources for welfare of the people under the umbrella of Dairy Science Park. The Senior Minister was thankful to various national and international organizations in supporting this sacred mission and welcomed a collaboration to materialize the dream of bringing a stable peace to the Region through coordinated efforts. The Task Force was approved by the Chief Minister Khyber Pakhtunkhwa and marked to the Secretary Agriculture for further processing.

Research and Development:

After getting DVM degree from UVAS Lahore, joined the Livestock Department, Government of Khyber Pakhtunkhwa Pakistan during 1983 as Veterinary Officer (Health) and worked on semen processing, farm management, feeding and health coverage. Worked at Civil Veterinary Hospital and provided therapeutic and immunization services to the incoming animals. Worked as Senior Research Officer on Herd Health Program and registered buffalo farms for applied research and extension services; analyzed the prevailing practices of feeding, health and reproductive management, introduced good practices and organized the farmers into Sarhad Dairy Farmers Association, facilitating them for availing services of various research, development, marketing and financial institutions. Completed master and doctoral degrees and published a report on mismanaged livestock sector, losing an export potential of US$ 20 billion at national level. The two successive Chief Ministers endorsed the Chief Minister Development Plan prepared by the author.

Academic excellence:

Annex-1 at the end of this Book.

Academia-Government-Industry/International Linkages:

Dairy Science Park (Park/DSP) has been introduced as a Triple Helix - Good Governance Model of Academia-Industry-Government Nexus.. The Park has been registered as a Society with the Government of KP, Pakistan and accepted by the United Nations as #UNSDGAction9671. In line with the vision of the Higher Education Commission, the business incubation concepts were integrated into postgraduate research ongoing at the Faculty, shaping up the University – Industry linkages. A biennial series of international workshops was initiated and it continued during November, 2011, 2013 and 2015, each by 450+ delegates, with 100+ technical papers and industrial exhibition. The proceedings were published online/printed and in impact factor journals. The 1st workshop focused on post-flood revival of the dairy industry, the 2nd on meat potential of the region and the 3rd on entrepreneurship development for the outgoing graduates. The fourth conference was held at Selcuk University Konya, Turkey on Nov 1-5, 2017.

Emerging industries in milk and meat processing and marketing have been provided technical and Quality Control certification support to relieve legal threats from the District Administration, who focus on price capping of milk and meat rather than quality. Meat shops established on modern lines of hygiene produce quality beef; however, such facilities are raided by the government agencies on the basis of higher prices. DSP facilitates inspection of such facilities, provides SOPs for quality standards and issues a certificate. Similar services are being extended to private slaughterhouses and meat/milk processing centers and other emerging entrepreneurs. A road map has been prepared for developing a Hygienic/Halal meat export base. The plan is aimed at introducing good practices into livestock SMEs. The plan has been supported by the provincial Agriculture Minister, Special Assistants to Chief Minister KP on Law and Livestock. Sandia National Lab USA has been supporting DSP under a Biorisk Management Collaboration. Four consultative workshops have been held in Amsterdam, Dubai, Bangkok and Phuket, participated by 43 members of DSP for curriculum development and integration of the biorisk management concept into the food value chain.

Charles Sturt University (CSU) Australia:

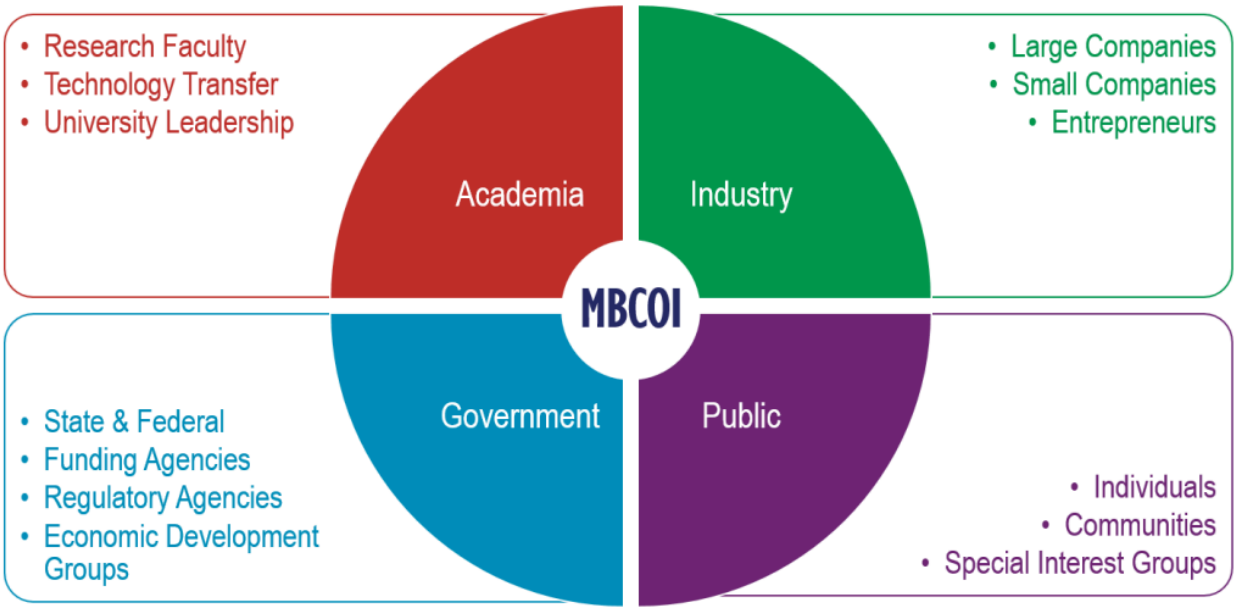
CSU was joined by Prof Qureshi as Adjunct Professor in 2010 which continued up to 2022. He outlined some of the key factors that impact on the reproductive efficiency of the Pakistani dairy buffaloes herd. It was found that under-nutrition and nutritional imbalance through feeding high protein-low energy diets suppress ovarian cyclicity. Interestingly ovarian activity is often negatively associated with insulin-like growth factor 1 (IGF1) levels since this is associated with higher milk yields. Clearly nutrient partitioning is playing a role here particularly when cows and buffalo are underfed. Interestingly, mid-chain length fatty acids (C12C14) are more prevalent in milk from crossbred (Sahiwal-Friesian crosses) than in purebred Sahiwal milk in which shorter chain saturated fatty acids prevail. Prof Qureshi attended the joint ISNH / ISRP International Conference-2014 at Canberra and presented a paper on productivity and fertility of crossbred cattle in the subtropical environment of Peshawar Pakistan. Pak-Australia Dairy Project assisted and supervised students' research at Peshawar, regarding reproductive biotechnology and women in development. The Australian Farming System was studied; visits were made to the farms and clinics and farmers meetings were attended at Charles Sturt University, Wagga Wagga, in collaboration with Prof Peter Wynn. The main problem identified was the difficulty of farmers in getting technical and marketing services; summer stress faced by the animals; and scarcity of laborers due to migration of the younger generations from rural to urban areas.

Policy development and reforms plan:

The Ex-Chief Minister KP, Mr Akram Khan Durrani approved the concept of the DSP as a development plan and recommended establishment of the University of Veterinary Innovations and Commercialization with up-gradation of the existing Faculty of AHVS, UAP establishment of additional facilities like slaughterhouses, livestock markets and entrepreneurship models. The Higher Education Commission accepted the Park as a Center of Excellence. Senior Minister KP, Mr Inayatullah Khan agreed on the establishment of DSP Board, under an Act of the Provincial Assembly, comprising Quality Control Laboratory Complex, Business Incubation Center, Halal Research Center and an Endowment Fund. His proposal for establishment of a Task Force for DSP was approved by the Chief Minister. The Chief Secretary KP declared DSP as an innovative idea. The idea of Mardan TechnoPark and Quetta TechnoPark was accepted in a meeting of relevant authorities under the chairmanship of Mr Arif Yousaf, Special Assistant to Chief Minister KP and Governor Balochistan. DSP IV – 2017 Konya endorsed the concept and Konya Teknokent offered cooperation through an MoU.

Introducing Good Governance

Although the public sector organizations resisted my plans in bringing reforms into the food value chain, due to lack of Good Governance and conflict of interests between the poor farmers and powerful stakeholders across the food value chain, I was successful in motivating the young students and scientists in developing their careers and linking with the industry and farmer/processors in establishing entrepreneurship models. International collaboration was established with various countries like the USA, China, Turkey, India, Pakistan, Afghanistan, Iran, UAE and others. A biorisk management program was pursued aggressively with Sandia National Laboratories USA, training persons to the tune of 104 man-times from various segments of the society like academia, government, industry and civil society. The biennial series of international conferences on Dairy Science Park were held at various locations successfully.



The Academia-Industry-Government-Public Nexus at MBCOI, North Carolina, USA

Good Governance Model Proposed

Historical Perspective of Governance Models:

Utilization of indigenous resources for welfare of the people and for bringing peace and stability in the regions, has been influenced by the governance pattern. The changing governance patterns have been reviewed (Etzkowitz and Leydesdorff (1995). Universities and industry, up to now relatively separate and distinct institutional spheres, are assuming tasks that were formerly the location of others. The role of government in relation to these two spheres is changing in apparently contradictory directions. Governments are offering incentives, on the one hand, and pressing academic institutions, on the other, to go beyond performing the traditional functions of cultural memory, education and research, and make a more direct contribution to "wealth creation" (HMSO 1993).

Governments are also shifting their relationships to economic institutions, becoming both more and less involved. In some countries with a laissez faire capitalist tradition such as the US government is playing a greater role in innovation in the civilian economy (Etzkowitz 1994a) while in former socialist societies government has withdrawn from its previous position of total control of science and technology policy; adopting a stance more in accord with laissez faire principles. Multi-national institutions such as the European Union, the World Bank and the U.N. are also moving to embrace concepts of knowledge based economic development that bring the knowledge, productive and regulatory spheres of society into new configurations.

MBCOI Model of Governance: Marine Bio-Technologies Center of Innovation, North Carolina, USA takes a much broader view that includes diverse applications of marine-based discoveries into sectors such as food, energy, and health (MBCOI, 2019). Recently, the global market for marine biotechnologies was estimated to be as high as $168 billion with significant growth opportunities for small business entities focused on areas such as fuel, diagnostics and aquaculture. MBCOI was established in 2012 as an independent, non-profit 501(c)(3) corporation (A United States corporation, trust, unincorporated

association or other type of organization exempt from federal income tax under section 501(c)(3) of Title 26 of the United States Code) to establish a marine biotechnology cluster. They facilitate the translation of innovative marine-related discoveries into products and services to benefit North Carolina's economy. By combining a regional focus with a global perspective, they strive to become the nexus for information, collaboration, and commercialization of marine biotechnologies among our stakeholders, both domestically and internationally.

MBCOI has assembled a diverse network of stakeholders around the globe to spur the development of marine biotechnologies. Initial efforts have led to identification of technologies with promising potential, resulting in a number of successful connections between innovators and collaborators.

In KP-FAO Livestock Action Plan 2019 Prof Qureshi attempted to suggest reforms in this changing environment with a focus on establishing an Academia-Industry-Government-Society Nexus. Academia would interact with the industry to provide solutions to their issues regarding productivity, quality control (Halal and hygienic status), product processing, product traceability and marketing at domestic and international levels. The Government would, at the same time, intervene in resolving the financial, marketing, administrative, legislative and infrastructural issues faced by the stakeholders and would consider replication of success stories in the form of entrepreneurship models. Shared authority and responsibilities would be practiced for getting ownership of the programs by the stakeholders.

FAO Opinion on Governance:

Governance was described as more than ever a driving concern in FAO's work and was considered critical to achieving FAO's Strategic Objectives (FAO 2019). At the global level, FAO works to build institutions and mechanisms that provide international norms, standards and data, promote international cooperation, and support an enabling environment for effective collective action to solve problems that cannot be addressed, or as effectively addressed, working at national level alone.

At the country level, the governance lens looks beyond purely technical issues to highlight how people, institutions and authority interact to influence political decision-making. Using political economy and stakeholder analyses, FAO helps governments identify their most important governance challenges related to food and agriculture, and improve the inclusiveness of their policies and programs to address them more effectively.

The Current Governance System:

The Consultant has been involved with the provincial and federal governments, the academia and private sector for a long period of 36 years. The DSP governance model has been developed through extensive interaction with the stakeholders during this period (DSP 2019). As evident from title, "Transforming Livestock Resources into a Beacon of Hope through a Good Governance Model", this Plan is an attempt to transform the current system of governance, concentrating the powers within a single stakeholder, into a new model with shared authority and responsibilities for all the four stakeholders, namely, LDD Ext, LDD Res, UAP and the private sector, under the umbrella of Livestock Technopark Peshawar.

Ghojal is a word of Pashto language used for animal sheds, in Pashto language, spoken in northern Pakistan and the adjacent Afghan Region. It is a sign of illiteracy, poverty, inferiority and helplessness of the livestock owners. This is a dirty area, without hygienic practices, supporting a good number of sheep,

goats, cattle, buffaloes and poultry. Government and private veterinary practitioners, feed dealers and other input suppliers use this facility for earning income and selling their products, ignoring their corporate sector responsibilities and effective public sector management.

The development programs of provincial and federal governments utilize funds for various projects, but with negligible impact on Ghojal. As a result, the farming resource base is facing socio economic pressure, compelling farmers to change the business. Especially the young educated family members look at the miserable conditions of their parents and try to avoid joining farming business.

Prof Qureshi opted for working at private buffalo farms for his PhD thesis research on nutrition-reproduction interaction in dairy buffaloes, identifying losses of exportable surpluses worth US$ 20 billion. A close contact with the miserable people led to the production of the Chief Minister Development Plan on advice of CM Office Letter dated 30-11-1998, for productive utilization of the livestock resources to bring prosperity and stable peace in the region. The Plan was endorsed vide letter of CM Office dated 8-1-2003, for implementation which was ignored. CM Office again endorsed establishment of Task Force on Dairy Science Park vide letter dated 2-8-2017, with no result. Prof Qureshi continued working on academia-industry-government interaction and was successful in protecting several emerging entrepreneurship models across livestock value chain; organized biennial series of international conferences and industrial exhibitions and popularized Biorisk Management through sponsorship of Sandia National Labs USA.

The Governance Model proposed by this Mission (this Author) is based on Academia-Industry-Government-Society Nexus, reflected in the cover picture of this Action Plan. It reflects the DSP initiative for establishing Livestock Technoparks, founded on the six SDGs; initiated through on-campus development of entrepreneurship models; supported by Extension and Research wings and industry/civil society for building the entrepreneurship network; leading to Halal food export. LTP would be used as an interactive platform for achieving the Sustainable Development Goals #2, covering production of milk, meat and milk for local consumption; SDG #3 covering food safety for protection of public health; SDG 5, engaging women in the livestock sector transformation process; SDG 7, providing biogas and solar energy for farm operations and processing factories; SDG 8, ensuring generation of decent employment for the youth through business incubation and entrepreneurship development and; SDG 16, ensuring end of conflict among stakeholders in the private and public sectors.

FAO-UN Consultancy

Prof Qureshi worked with the Food and Agricultural Organization of the United Nations at Islamabad, Pakistan as National Consultant Livestock and Dairy Development for preparation of KP Livestock Action Plan. Establishment of Livestock Technopark Peshawar was proposed as a good governance model. Details are available under Annex-2.

ITC-UN Consultancy

Prof Qureshi worked with the International Trade Center of the United Nations ITC-UN as National Consultant for preparation of Balochistan Livestock Breeding Policy 2022. Establishment of Livestock Technopark Quetta was proposed as a good governance model. Details are available under Annex-3.

ASRT Egypt Consultancy

Dr Abdul Rahman Ilyas, Advisor to ASRT President, Government of Egypt for Technology Innovations and Collaborations, desired establishing Dairy Science Cairo (DSPC), a joint project of Academy for Scientific Research and Technology (ASRT) and Dairy Science Park Peshawar Pakistan. He is the co-founder of DSP alongwith Prof M Subhan Qureshi. Dr Amr Faroukh Abdelkhalik Vice President and Mahmoud Sakr President ASRT have endorsed the proposal. DSPC will be established as an autonomous regulatory, financial and marketing authority, run by a Board of Governors representing all the stakeholders and an Endowment Fund. DSPC will support the public sector organizations as facilitators and the academia in generation of feasible entrepreneurship models across the Livestock based Value Chain (LBVC). The Major task of DSPC would be generation of decent employment and exportable hygienic/Halal certified food and biotech products (Annex-3).



DSP Governance Model is based on Academia-Industry-Government-Society Nexus; producing entrepreneurship models across livestock value chain, through interaction of the former two and propagation through the later two.

10. The purpose of our life

As a retired professor of 64 years with a married son and four daughters and having an experience of over 41 years in public and private sector organizations, Prof Qureshi considers himself responsible for coaching the youth in career development, helping my kids in raising their kids, motivating the helpless segments of the society and assisting the public and private organizations in policy reforms. He considers his knowledge, skills, linkages and other resources as a common heritage for humanity, with special focus on responding to the issues faced by the stakeholders across the food value chain and the general masses. Various SDGs of the Sustainable Development Agenda are being pursued for providing relief to the people on Earth. Prof Qureshi considers himself responsible for spreading the message of Allah SWT (Almighty God) communicated through His last prophet Muhammad SAW for a successful life in the World and the Hereafter.

Prof Qureshi's Vision

I envision a world with tolerance, co-existence, justice, peace and prosperity for all people around the Globe, irrespective of race, gender, age or any other type of discriminatory approach. I consider the resources available to mankind as a common heritage for all of us and I consider utilization of these resources for the welfare of all. I condemn the aggression of powerful nations/governments/groups against the weaker ones. I envision the divine guidance necessary for our collective successes in this World and the Hereafter in light of teachings of the last prophet of our Creator and Sustainer, the Almighty God.

Prof Qureshi's Responsibilities

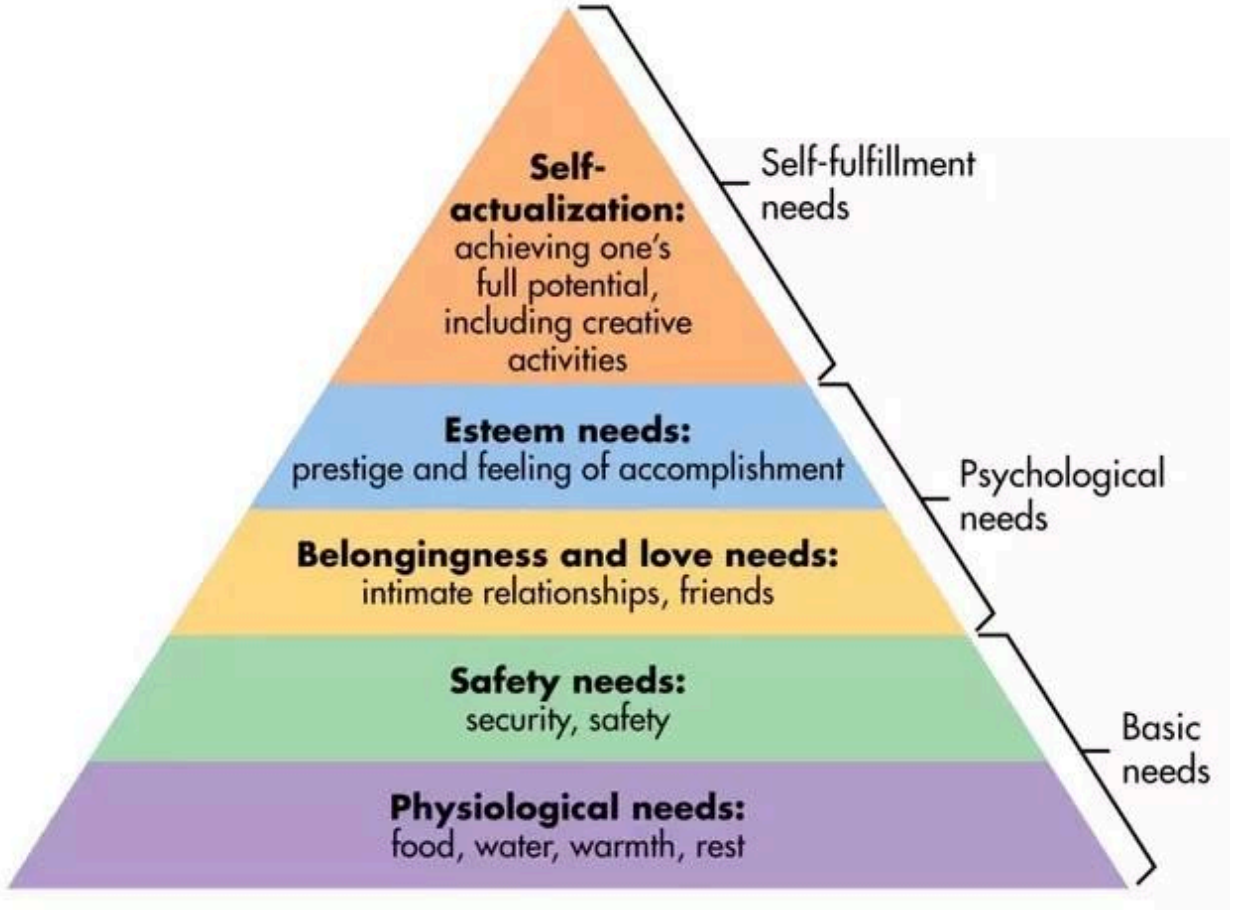
I must assist the civil society in reducing poverty, utilizing the available indigenous resources in the best possible judicial manner, to meet human needs. In line with my specialty in livestock science, I would like to continue supporting the development of entrepreneurship models across the food value chain, in all parts of the World. As a practicing Muslim, I have to convey the message of Allah SWT and teachings of Prophet Muhammad (SAW) to the people around the Globe, to get successes in this World and the Hereafter.

Meeting the human needs

Humans are composed of a body and a soul. Hence, human needs may be categorized into material and spiritual ones. Maslow's hierarchy of needs comprises a three-stages model, often depicted as hierarchical components within a pyramid (McLeod- Saul 2020). From the bottom of the hierarchy upwards, the needs are: i) basic, comprising physiological (food and clothing), safety (job security), ii) Psychological comprising, love and belonging needs (friendship), esteem, and; iii) self-fulfillment comprising self-actualization. Needs lower down in the hierarchy must be satisfied before individuals can attend to needs higher up. Needs at the lowest level (basic needs) may be satisfied through physical and biological sciences while needs at higher levels (psychological and self-fulfillment) may be managed through ethical codes.

Meeting material needs of mankind

Having knowledge and experience across the food value chain, I consider the food resources to be sufficient for meeting human dietary needs. Increasing public and academic attention to food, its politics and problems results in intense political statements and academic studies about food governance (ECPR 2021).



Maslow's hierarchy of needs comprises a three-stages model of hierarchical components within a pyramid (McLeod- Saul 2020)

Food governance involves many conflicting values and dimensions. It is linked to international trade, environmental problems, agricultural policies, human rights, poverty reduction, and health problems. It is multi-actor: e.g. private and public actors setup labeling systems to monitor food safety. It is multi-level: NGOs and different layers of government express intentions about food trade, and develop ideas of fighting hunger and climate change on global and local level. And, finally, food governance is a politically strategic issue: should sovereign states be dependent on foreign powers for their food supply?

Given the many different actors, levels, and domains, food governance brings about framing conflicts and scaling problems. It poses challenging questions to those involved in food politics, in terms of complex and transboundary interactions and adaptive governance structures. Although food has 'moral, economic, and security imperatives' (Obama, May 18 2012), attention to food in political science

remains limited. With this section we intend to put food governance more firmly on the agenda of political science.

Food Value Chains are dominated by powerful stakeholders in my homeland Pakistan, in Asia and around the Globe. The Author had a very bitter experience with the public sector organizations in Pakistan, and the Food and Agricultural Organization of the United Nations, where he has failed to break the red tape affecting growth and even survival of the helpless producers and processors.

According to (WDL 2021) 52% of urban and 48 percent of rural population around the Globe (2.51 billion) face moderate to severe food insecurity. Stunted children under the age of 5 have reached 0.18 billion, comprising 59% rural and 41% urban population.

As a food scientist, I feel it is my prime responsibility to work for the defense of the poor stakeholders across the food value chain at local, regional and global levels, under the Dairy Science Park (DSP 2019).

Meeting spiritual needs of mankind

Spiritual needs of mankind may be met through ethical codes and frameworks. Ethics involves systematizing, defending, and recommending concepts of right and wrong behavior (Wikipedia 2021). A central aspect of ethics is "good life", the life worth living or life that is simply satisfying, which is held by many philosophers to be more important than traditional moral conduct.

Most religions have an ethical component, often derived from purported supernatural revelation or guidance. Some assert that religion is necessary to live ethically. Simon Blackburn states that there are those who "would say that we can only flourish under the umbrella of a strong social order, cemented by common adherence to a particular religious tradition".

Confucianism emphasizes the maintenance and propriety of relationships as the most important consideration in ethics. What you owe to another person is inversely proportional to their distance from you. In other words, you owe your parents everything, but you are not in any way obligated towards strangers. Buddhism, and specifically Mahayana Buddhism, brought a cohesive metaphysic to Chinese thought and a strong emphasis on universalism. Neo-Confucianism was largely a reaction to Buddhism's dominance in the Tang dynasty, and an attempt at developing a native Confucian metaphysical/analytical system. Ethics are explained in Hindu philosophy as something that cannot be imposed, but something that is realized and voluntarily lived up to by each individual (Blackburn, 2001).

Abrahamic religions explain ethics in the light of divine guidance from Allah SWT the Almighty God. Christian ethics includes questions regarding how the rich should act toward the poor, how women are to be treated, and the morality of war. Christian ethicists approach ethics from different frameworks and perspectives. Jewish ethics may be said to originate with the Hebrew Bible, its broad legal injunctions, wisdom narratives and prophetic teachings. Most subsequent Jewish ethical claims may be traced back to the texts, themes and teachings of the written Torah.

The last Abrahamic Religion, Islam provide the final ethical code from Allah SWT, the Almighty God. The foundational source in the gradual codification of Islamic ethics was the Muslim understanding that mankind has been granted the faculty to discern God's will and to abide by it. This faculty most crucially involves reflecting on the meaning of existence which, as John Kelsay in the Encyclopedia of Ethics phrases, "ultimately points to the reality of God." Therefore, regardless of their environment, humans

are believed to have a moral responsibility to submit to God's will and to follow Islam (as demonstrated in the Qur'an and the Sunnah, or the sayings of Muhammad SAW [Quran 7:172].

I believe in the finality of ethical code provided by the latest religion from our Creator and Sustainer and consider it as a key to success for mankind on individual and collective levels, in this worldly life as well as the Hereafter.

Our duties towards the Almighty God

As a Khalifa (Representative) of Allah SWT, the Almighty God, mankind cannot ignore praying to Him and obeying Him as per His commandments revealed through about 124,000 messengers (the prophets), defining rights of Allah SWT and His creatures, as Huqooq ulllah and Huqooq ul Ibad, respectively. All prophets have preached about “LA ILAHA ILLALLAH” (Video-12), oneness of His last prophet Muhammad SWT has conveyed his final religion Islam, in place in the world for the last 1442 years, followed by 1.9 billion Muslims around the Globe. In his last sermon, the Prophet said, “O people, listen to me in earnest, worship Allah, say your five daily prayers (Salah), fast during the month of Ramadan, and give your wealth in Zakat. Perform Hajj if you can afford to”.

Believing in Allah SWT, the Almighty God, is not as complicated as someone may think. To be a Muslim one must sincerely believe in the absolute oneness or uniqueness of God, this is an Islamic concept known as Tawhid. A true believer sees Allah as the only entity worthy of worship, there’s no other, no partnership, nor idols that are deserving of praise. Allah is the ultimate creator, there’s no close second. It is only through His will that things happen. The other condition of being a Muslim is the belief in his messenger, Prophet Muhammad SAW.

This is why the Shahada is also called the first pillar or tenet of Islam. It’s the basis for which the foundation of Islam is built. Built on-top of this foundation is zakat (charity), daily prayers, fasting during the month of Ramadan, pilgrimage to hajj, and other practices. But the whole building is compromised if you don’t believe in the basic tenet.

Evidence of the existence of Allah SWT was reviewed by Late Dr Israr Ahmed (Video-13). He concluded that the existence of God cannot be proved through logical arguments and reasons. Imam Razi the great Muslim scholar developed various arguments in favor of the existence of God. Later on he presented a moral argument for the existence of God that, “We believe Him because we need Him”. He gave two arguments; ‘the starry heavens above and a moral law within’. At the time of death Shaitan came to him and rejected all of his arguments. At the end he said, “I am dying in faith of God as my mother believed”. Morality guides us to tell the truth, not lies. But why because telling the truth may harm you through evil forces? Here, you need to believe in God that He wants you to tell the truth.

Dr Israr Ahmad refers to ‘Appearance and Reality: A Metaphysical Essay, a work by Bradley’, philosophy is the finding of bad reasons for what we believe on instincts. Qur’an mentions Iman billah as, “The knowledge and love of Allah SWT are inbuilt in human soul”. Because the source of soul (Rooh) is Allah’s SWT. And they ask you (O Muhammad (SAW)) concerning the Ruh (the Spirit); Say: "The Ruh (the Spirit): it is one of the things, the knowledge of which is only with my Lord. And of knowledge, you (mankind) have been given only a little" (Al-Qur’an, 17: 85).

However, the over involvement of mankind in material world, the philosophy of cause and effect’, the lust, desires, comforts and ease of their Nafs (body) has made him unaware about Allah’s knowledge and

love. So there is a need of reminding mankind about some signs of Allah SWT. This is just like remembering a forgotten friend after looking at his gift coming out of an old trunk. Immanuel Kant in Critique of Practical Reason, mentions that God is postulated as a condition of the supreme value of moral life, the Sovereign Good (Alexandru-Petrescu, 2014).

Since in the sensible world moral conduct does not warrant proportional happiness, the virtuous ones have strong reasons to believe in the reparatory intervention of a superior power: God, as moral ideal and guarantee of moral order. “Morality leads, inevitably, to religion, through which it extends over a moral Lawgiver” claims Kant.

Dr Israr Ahmad further explains human beings as composed of a material body and an immaterial/ immoral soul or Spirit. The body is having animals’ instincts like hunger, sexual desires, etc. while the soul provides him a Divine Spark. The soul accommodates knowledge, love and marifat of Allah SWT, the Almighty God. Sometimes, our material needs overwhelm our spiritual needs. So mankind has to be reminded about his spiritual needs to get out of his sub-consciousness. All creatures of Allah SWT in this Universe remind us of the presence and powers of Allah SWT as Omnipresent and Omnipotent being.

Allah SWT reminds us about Himself as: “Do they not look at the camels, how they are created? And at the heaven, how it has been raised up; And at the mountains, how they have been set up; And at the earth, how it has been encrusted? (i.e., provided with a surface or crust). So remind them! Surely you are only a constant Reminder; You are not in any way a dominator over them; Except for him who has turned away and disbelieved; Then Allah will torment him with the greatest torment”. If one who does not remember his forgotten friend after looking at his old gift, no argument can convince him to remember his friend (Al-Qur’an, 88: 17-24).

Our duties towards the creatures

As per commandment of Allah SWT, the Almighty God, we must take care of Huqooq ul Ibad (rights of mankind) after ensuring Huqooq ulllah (Rights of Allah SWT). We must take care of our fellow human beings, the animals and the environment. Here comes a conflict of interests. As humans we would compete with fellow humans and would not hesitate to get benefits on cost of our fellow humans. We would offend other countries and groups of people to grab their resources.

We would even destroy countries like Iraq with false allegations of weapons of mass destruction and Afghanistan for hosting Osama Ben Laden. We would utilize international bodies like NATO or the United Nations, to achieve our evil desires. We would like to suppress the rights of the people of Palestinians and Kashmiris while grabbing their lands.

We would not take into consideration the welfare of animals while getting benefits out of their products and services. We would utilize them like factories for producing goods, damaging their welfare status. We would use the land, waters, soil and plants for immediate human benefits, damaging the environment and ecosystems.

Our lifestyle needs brakes

We need divine guidance to recognize the rights of others and stop enjoying our rights when the interests of others are offended. Junaid Jamshed, a Pakistani recording artist, entrepreneur and an Islamic preacher, has reviewed Huqooq ul Ibad in a beautiful manner (Video-14). He shares his story

when people told him that we are already praying to Almighty God, and one must emphasize upon our duties towards His creatures. We must focus on prevention from telling lies, backbiting, making false allegations and being miser. Prophet Muhammad (SAW) was once asked whether a Muslim could be a coward, he said yes; again he was asked whether a Muslim could be miser, he said yes; again he was asked whether a Muslim could be a liar, he said no.

Saying the truth is harder than climbing on a mountain. However, these principles are very hard to follow as our evil desires push us in the opposite direction. Earning Halal food (not prohibited by the Qur'an) is difficult and one has to kill his desires as well their kids' desires, to earn it. Every one of us presumes that he is better than others and he keeps on back biting others and framing false allegations against them. Malik Ben Dinar once said that if it is announced that the worst person must get out of Masjid, no one will get out before me if I am not interrupted. When another religious scholar was told this story, he said that due to this fact Malik Ben Dinar has been granted this spiritual position by Allah SWT. While looking at the funeral ceremony of others we think that only he had to die and I will not die and I will not be answerable to anyone regarding my deeds, after death. Snatching bread from months of the kids of others and putting it into the mouths of our own kids is not acceptable.

We are asked to preach to the people for rectification of their muamalat (interaction and dealings with others) in addition to their concentrating on routine prayers. Let's see what are the right muamalat. A religious scholar of Kufa (Iraq) was involved in cloth trading. One day he got delayed from reaching his shop and asked his son to attend to the customers. He saw a customer coming out of the shop and asked him what price he was charged. He was told that 400 dirhams were charged. He asked the customer to follow him up to the shop. He asked his son why the cloth was sold at double the price? His son told him that the customer agreed on the price as he was still earning 100 dirhams as he would sell at 500 dirhams. The religious scholar told him that we are selling the cloth at 200 dirhams so the remaining 200 dirhams may be returned to the customer. This is an example of rectified muamalat which may lead to the establishment of a prosperous society through availability of essential items at affordable rates.

There are brakes in our life that prevent us from disasters. Just like a car with brakes can be driven safely, divine brakes in our life help us to be on the right track and rewarded by Allah SWT, the Almighty God. A person will not stop saying lies during hard times unless he has linked himself with the Almighty God. Allah SWT has directed mankind in the Holy Qur'an many times, about his oneness, His Creation and His Sustenance. This is the pattern adopted by a kind father to prevent his kids from wrong doings. While a king would issue certain regulations notifying punishments for some wrong doings. Allah SWT has adopted the pattern of a kind father rather than a king, to prevent us from wrong-doings and subsequent punishment. Being careful in our worldly affairs, to be helpful for others, as followers of Prophet Muhammad (SAW), the Rahmatullilalameen, the blessing for the Worlds, would lead us towards a universal society full of peace and prosperity.

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Video-6: Saudi City Of Neom Explained | City Of Dajjal. Viral Story

Video-7: Prediction About End Of Time - قیامت آنے سے پہلے کیا ہو گا؟ - Dr Israr Ahmed

Video-8: Gurr Making | Jaggery Making Process from Sugarcane | Village Life in Pakistan. YouTube

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Video-11: How To Make Jaggery At Home | Organic Jaggery(Gur) | Jaggery Making | Village Food Secrets

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Video-13. Evidence of Allah SWT's existence – by Dr Israr Ahmed.

Video-14: Junaid Jamshed - Huqooq ul Ibaad.

Video-15 Removing Nawaz Sharif In 2017 Has Cost Pakistan Billions Of Dollars? - Irfan Siddiqui; Naya Daur TV

Annexures

Annex-1. Summary of Career Profile of Prof M Subhan Qureshi

Item	Description
1. Education/ Academic qualification	• DVM (1982) and MSc Hons Animal Reproduction (1988) • PhD Animal Reproduction, Thesis title: Reproduction Nutrition Interaction in Dairy Buffaloes, University of Agriculture, Faisalabad (1998)
2. Positions	• Veterinary Officer/SRO, Livestock DD, Government of KP, Pakistan (1983-2005) • Professor of Theriogenology and Dean of the Faculty of Animal Husbandry and Veterinary Sciences, the University of Agriculture Peshawar (18 Jan 2005 - 19 Mar 2019)
3. External positions	• President, Dairy Science Park (21 Nov 2011 to date) • President National Eco-Security System Pakistan (13 Oct 2023 to date) • Ex National Consultant , Food and Agriculture Organization Pakistan (20 June to 31 Aug 2019) • Ex-National Consultant International Trade Organization of the United Nations (ITC-UN) Quetta ((1 Jul to 30 Nov 2022) • Adjunct Professor, Graham Centre for Agricultural Innovation, Charles Sturt University, Wagga Wagga, NSW, Australia (25 Nov 2010 - 31 Dec 2023) • Associate Member, KP Chamber of Commerce and Industries Peshawar • Advisor Academics, KP Livestock Farmers Welfare Association Peshawar • Member Focal Group RTAC, USAID
4. Academic contributions	• Students supervised, PhD Major: 6; PhD member: 13; MPhil: Major: 23; Member: 61 • Research projects completed: 6 • Motivational and technical support to the youth across livestock value chain through academia-industry linkages, focused at development of entrepreneurship development • Academic visits abroad: 18 • Established Dairy Science Park (https://dairysciencepark.org/) as a Good Governance Model
5. Special Achievements	• Biorisk Management integrated into DVM Curriculum at Colombo under a collaboration between Dairy Science Park - Sandia National Labs USA • Introduced quality control standards and marketing linkages to the emerging entrepreneurs in livestock farming and value addition • Functionalized the University Feed Mill through public private partnership • Policy reforms through Triple Helix Good Governance Model under a biennial series of 6 international conferences and industrial exhibitions on Dairy Science Park, a provincial government consultation and 2 UN consultations

Item	Description
6. Professional assignments completed abroad	● **Thailand**, i) Bangkok, March 28 to May 6, 1994: Attended 10th International Training in Swamp Buffalo Reproduction at Chulalongkorn University. Sponsor: Royal Thai Government; ii) Bangkok, 14-18 Nov, 2016, Led biorisk management workshop, sponsored by Sandia National Labs (SNL) USA; iii) Phuket, 17-22 March, 2017; Led senior management workshop on biorisk management, sponsored by SNL. ● **Italy**, October 15 to 28, 2007: Attended 8th World buffalo congress at Caserta. Sponsor: HEC ● **Egypt,** i) Cairo, 27 Feb - 4 March., 2010; Attended 6th Int Conf Egyptian Soc Exp Biol, Minoufiya University. Sponsor: HEC; ii) Alexandria, 1 to 6 July, 2010, Attended Int Workshop On Industrial Biotechnology. Sponsor: OECD, Paris, France. ● **Saudi Arabia,** i) Jeddah, Feb and July, 2010. Sightseeing, performance of Umrah and professional linkages on the way back from Egypt. Makkah, Sept 30 to Nov 10, 2014 for performance of Hajj and negotiations on collaboration in Halal meat production and quality control. ● **Australia,** i) Wagga Wagga, Nov 12-Dec 24, 2010. Visiting Professor Charles Sturt University; ii) Canberra, Sept 6-13, 2014, to attend Joint ISNH / ISRP International Conference. ● **Turkey,** i) Konya, Sept 6-16, 2012. Presented a paper and chaired session 2 of the International Conference on Applied Life Sciences. Discussed meat export from Khyber Pakhtunkhwa with the scientists at Selcuk University and industry people. Sponsor HEC; ii) Konya, visited Konya along with 50+ delegates from Pakistan as Co Chair of Dairy Science Park 2017, Nov 1-5, 2017. Sponsor: SNL ● **The Netherlands**, 15-18 March, 2015. Led Working Group on Biorisk Management of DSP to attend a meeting with US counterparts and Third Int One Health Congress sponsored by the United States Department of State's Biosecurity Engagement Program and Sandia Natl Labs. ● **China,** Xi'an, 25-28 Aug 2015. Presented paper (Inam, et al) at 7th Int Symp Integ Zool, ISZS at Normal University. ● **UAE,** i) Dubai, May 21-25, 2016. Led DSP delegation to attend consultative workshop on Pakistan Biorisk Curriculum Dev (Sponsor: Sandia National Labs USA); ii) 29 April-1 May 2019, PAK - PVMC BRM Awareness Workshop for Pakistani Universities. Sponsor Sandia Labs USA. ● **Sri Lanka**, Colombo, Sep 5-7, 2017. Led DSP delegation to attend consultative workshop on Pakistan Biorisk Curriculum Development with Sandia National Laboratories USA (sponsor). ● **Iran,** Mashad, 7-8 Dec 2017. Attended Science Tech +; presented paper; participated in Entrepreneurship Show at Firdosi University. ● **Jordan**, Amman and Irbid, April 29-May 1, 2018. BRM Meeting on the use of research methods and role of biotechnology; Sponsor SNL USA.

Item	Description
7. Membership Of International Bodies	● Technical Expert DAAD Research Grant Scholarships, Germany. ● Pak-Australia Dairy Project ASLP(Expert in Dairy Reproduction). ● American Dairy Science Association, USA ● Society for Theriogenology, USA, Active Member, 2006 ● International Society of Zoological Sciences ● International Society for Applied Life Sciences ● Relief International Pakistan, Focal Point for KP Universities ● Member ed board, Asian-Aust J AnimSci; Pak Vet J; J Agric Sci Tech A ● Reviewer, Tropical Anim Health Prod; Livestock Sci; J Dairy Sci; Pak J Zool
8. PhD scholars supervised as Major Supervisor	● Sohail, SM, 2007. Genetic and phenotypic evaluation of dairy buffaloes for performance traits. ● Mushtaq, Anila, 2009. Effect of physiological states on milk composition in dairy animals under subtropical conditions. ● Ikramullah Khan, 2014. Evaluation of different stress indicators associated with reproductive cyclicity of crossbred dairy cows. ● Ihsanullah, 2016. Effect of stress on reproductive physiology of crossbred cattle under sub-tropical conditions of northern Pakistan. AUP. ● ShakirUllah, 2016. Association of oxidative stress with GnRH concentrations in crossbred dairy cows. ● Saqib, MN, 2020. Stress Factors Affecting Sustainable Dairy Farming And Improvement Strategies For District Peshawar.
9. PhD scholars co-supervised	● Khan, Sarzamin, 2007. Lactation – Reproduction Interaction in dairy buffaloes. AU Peshawar. ● Chand, Nyla, 2008. Effect of Berberis Lycium on the performance, serum lipid profile, immunity and liver function in broiler chicks. AgricUniv Peshawar. ● Tanveer, AJ, 2011. Effect of administration of different levels of methanolic extract of Peganumharmala on hematology, immunity and serum… ● Sultan, Shoaib, 2016. Dietary supplementation of protected fats and Vitamin E to improve semen quality in Beetal bucks. ● Muhammad Abubakar, 2017. Appdynamics and molecular characterization of peste des ruminants virus. PARC Institute of Advanced Studies in Agriculture. ● Saima Dil, 2018. PARC Institute of Advanced Studies in Agriculture, UAP. ● Muhamamd Inam. Stress productivity interaction in broilers. ● Kamran Khan. Meat production potential of rabbits. Research in progress. ● Khan, Nadar. Optimizing the nutritional value of maize silage in relation to milk production and quality of dairy cows. ● Khan, M Tahir. Evaluation of fungal treated roughages for beef prod in KP. ● Asadullah. Studies on epidemiology, and molecular characterization of mycobacterium in large ruminants in central zone of KP. ● Khalil, Zia ur Rahman. Postpartum reprod cyclicity and serum biochemical profiles of Achai cattle under farming practices in Northern Pakistan. ● Lal, Chaman (Late). PIASA, NARC, Islambabad, Major SMH Andrabi.

Item	Description
10. Conferences/ workshops/organized https://dairysciencepark.org/conf/	• International Workshop on Diary Science Park, University of Agriculture, Peshawar (Nov 21-23, 2011) • Second International Workshop on Dairy Science Park, University of Agriculture, Peshawar, Nov 18-20, 2013 • Third International Workshop on Dairy Science Park, University of Agriculture, Peshawar, Nov 16-18, 2015 • Fourth International Workshop on Dairy Science Park, Selcuk University Konya, Turkey, Nov 1-5, 2017 • Fifth International Workshop on Dairy Science Park, University of Balochistan, Quetta, Nov 19-21, 2019 • Sixth International Workshop on Dairy Science Park, Islamia University, Bahawalpur, Mar 20-21, 2022
11. Facilitated development of Entrepreneurship Models	Development of Feasibility Models and Quality Control Certification were facilitated for the following emerging entrepreneurs: • Farmer's Sausage Company, Peshawar • Royal Dairies, Peshawar • Peshawar Meat Pvt Ltd Peshawar • DSP Slaughtering Point, Bar Tehkal, Peshawar • Jan Arcade Meat Shop, Peshawar • Dairy Life Cattle Feeds, Peshawar • Mr Kamal Khan, silage industry, Mardan
12. Publications	• Web of Science ResearcherID: C-7212-2008 • Impact Factor Articles: 68 (20 Jan 2024) • Books: 19 • Book Chapters: 2 • Conference papers: 85 • h-Index: 14 • Citations: 718
13. List of latest Impact Factor publications	Khan A, Khan RU, Qureshi MS, Mobashar M, Gohar A, Ahmad S, Khan K, Khan H and Naz S, 2021. Effects of Different Equilibration Times on Post-Thaw Cryopreserved Semen Quality of Cattle and Buffalo Bulls. Pak J Zool, 53: 613-618. DOI: 10.17582/journal.pjz/20190824040816. Saqib MN, MS Qureshi, SM Suhail, RU Khan, G Bozzo, E Ceci, V Laudadio, V Tufarelli, 2022. Association among metabolic status, oxidative stress, milk yield, body condition score and reproductive cyclicity in dairy buffaloes. Reprod Domest Anim. doi: 10.1111/rda.14086. Ullah A, R Khan, SM Suhail, I Ahmad, FA Khan, MS Qureshi, NA Khan, AA Akkari & DAEM Ahmed, 2022. Bioinformatics analysis and the association of polymorphisms within the caprine *GDF9* gene promoter with economically useful traits in Damani goats, Animal Biotechnology, DOI: 10.1080/10495398.2022.2154676

Annex 2: FAO-UN Consultancy for KP Livestock Action Plan 2019 - Executive Summary

The good offices of Food and Agricultural Organization of the United Nations at Islamabad, Pakistan appointed Prof Dr Muhammad Subhan Qureshi as National Consultant Livestock and Dairy Development under Program/Project Number TCP-PAK 3701-C1/AFOR Program with duty station at Peshawar for a period of 45 Days, to report to Farrukh Toirov, AFOR Program, FAO, Islamabad. Personal Service Agreement (Manual Section 319) was signed with Ms Mina Dowlatchahi FAO Representative Pakistan. The Mission started working at FAO Peshawar on 10 June, 2019. Mr Waleed Mahdi and Dr Sanaullah Khan have been taking care of the local facilitation of the Mission as IPC and Responsible Officer of the project, to complete this task while Ms Faiza Younas facilitated at FAO Islamabad.

The mutually agreed TORs required development of the Action Plan with estimated budget for Livestock Sector Development and Transformation, based on KP Livestock Policy; covering regulatory issues, value chain development, private sector engagement and overall required capacity at provincial and district levels; to elaborate on roles and responsibilities of various stakeholders focused on institutional reforms; review the current policy/strategies/program and align livestock sector priorities.

The National Consultant has been involved in sensitization and facilitation of stakeholders across food-value-chain for generation of decent employment and exportable surpluses through his diversified service experience in livestock extension and research wings of the Livestock and Dairy Development, Government of Khyber Pakhtunkhwa and as a Professor/Dean at the University of Agriculture Peshawar, spread over 36 years. He has got an extensive exposure to the private sector through Herd Health Program, Small and Medium Enterprise Development Authority (SMEDA), Dairy Science Park (DSP), KP Food Safety and Halal Food Authority (KP-FSHFA), KP Livestock Farmers Welfare Association (KP-LFWA) and KP Chamber of Commerce and Industries (KPCCI). Productive collaborations were established with Sandia National Labs USA, Konya Technopark Turkey (KT), Chinese Academy of Agricultural Science (CAAS) and Charles Sturt University (CSU). Three Chief Ministers of the province endorsed the concept of Prof Qureshi on transformation of the livestock sector through academia-industry-government interaction.

The Office of the Director General LDD (Extension Wing) of the Livestock and Dairy Development Department (LDD Ext) was visited along with Director Planning LDD Ext. The DG suggested establishment of Policy Implementation Cell and restructuring of the Department through a clearly defined mandate. They suggested a Rangeland Management Committee and a forum for creating linkages among department, migratory livestock keepers, livestock traders, market administration etc. These concepts have been covered under an autonomous body of Livestock Technopark Peshawar (LTP). Coordination forum for updating curriculum was suggested, however, it falls under national mandate of the Pakistan Veterinary Medical Council and cannot be addressed at provincial level. Creation of paid house jobs and risk analysis of jobs have been covered under LTP through an incentives package. Determination of nutrients profile at regional level may be undertaken as a development project.

Establishment of an Advisory Board for livestock and poultry market was an important suggestion of Director General LDD (Ext); however, the Mission is suggesting an autonomous body, “Livestock Technopark Peshawar (LTP)”, as an Academia-industry-society-government nexus, rather than an advisory board with no implementation authority. The department is suggesting livestock baseline survey, which can be done through the existing institutional network. Training need assessment is the

requirement of all the stakeholders across food value chain and will be taken up by the proposed LTP. Extension and Communication Advisory Committee and gender mainstreaming have already been accommodated in the plan through engagement of Women University Mardan and establishment of LTP.

Director General Livestock and Dairy Development Research Wing (LDD Res) Charsadda Road Peshawar was kind enough to hand over the required documents to the Mission and to arrange a workshop regarding the issues, policy interventions and proposals to be included in this Action Plan. A general perception was that research facilities could not be made appropriately available due to procedural complications and the time required to materialize the purchase process. The scientists get little opportunities for conducting outstation applied research at commercial farms and products processing facilities. Creativity of the scientists is depressed due to lack of motivating environment and after getting higher qualification (PhD degree) the scientists find no attraction to stay here and leave to join services at some university or abroad. Creating an enabling applied research environment for the officers through an incentives package, user-friendly procurement rules and their promotion based upon performance, will raise the level of satisfaction of the officers, leading to enhanced performance of the research wing.

Vaccine production is a useful activity of Veterinary Research Institute Peshawar. However, the laboratories do not meet the required standards and certification of PNAC, DRAP, ISO and other agencies, which otherwise, would help in improving the quality of services. Coordination is lacking with the LDD Extension Wing, impeding access to field trials; sale of vaccines in the field; popularizing the biological products and getting feedback for improvement of the products. VRI Peshawar has already demonstrated an effective setup of the PLA (personal ledger account) Revolving Fund, ensuring timely supply of the desired items qualitatively and quantitatively. Personal Ledger Account has been a success story as the brainchild of Dr Bakht Daraz Khan, which is proudly brought on record by this Mission. Outreach facilities for working with commercial farmers on applied research, are lacking. Dairy feed mills have been established at LRD Farms. Purchases and sales are made under PP Rules 2004, with competition for low prices among the bidders, payment of taxes and decisions at the highest administrative levels. An amount is paid by the government as a subsidy. Unrealistic and higher receipt targets are fixed by the provincial government in the Budget Book.

The Livestock and Dairy Development Department, Extension (LDD Ext) and Research Wings (LDD Res) are taking care of extension and research needs of the livestock sector. Livestock Markets and Slaughter Houses are being managed by Local Council Board, livestock education is managed by Higher Education Department through various universities, Livestock Enterprises and Trade are overseen by KP-LFWA, KPCCI and SMEDA; food quality by KP-FSHFA and price regulation by the district administration. Fisheries have got their own Directorate General. Hence, 10 government/private organizations are taking care of a single livestock sector. All of these organizations work in total isolation without any mechanism for coordination or judicial access to the government resources. Hence, the issues of the livestock stakeholders across the livestock based food value chain remain ignored. This may not qualify to be called a good governance model.

The Mission was of the opinion that the private sector is suffering badly. Price capping has restricted the growth of the dairy and meat industries. Young dairy and meat entrepreneurs providing high quality products are fined, punished and sealed by the district administration/KP-FSHFA while those selling low quality items keep on working. Degree programs of three provincial universities have been non-accredited by the Pakistan Veterinary Medical Council. The Livestock Market and Slaughterhouses

have failed to attract the attention of the Government. Private sector could not get appropriate patronage from the government to survive and contribute to the economic growth of the province through generation of decent employment and exportable surpluses. Consumers could not get access to milk, meat and eggs of their desired quality. International opportunities like collaboration with Konya Technopark, Tukey could not be honored.

LDD Ext represents 25% of the Livestock Sector, the rest being LDD Res, UAP and KP-LFA, 25% each. The primary stakeholder is the farmer, represented by KP-LFA while the rest are service providers. A well-off farmer would be a sign of relief for the society to get clean food and employment opportunities. For achieving the targets of transformation of the sector on commercial lines and development and replication of entrepreneurship models across the livestock value chain, all the participants except the representative of the DG LDD Ext agreed on establishment of an autonomous body with full administrative, legislative, regulatory and financial authority. Livestock Technopark Peshawar (LTP) was suggested by this Mission, as a Good Governance Model, in line with the FAO opinion on governance work to be problem-driven, context-specific and people-centric. It seeks to clarify the political nature of a problem, identify the primary issue (s) and involve all relevant stakeholders to arrive at workable solutions. Governance analysis helps to understand how structures, institutions and unequal relations of power interact in the deliberation over ideas, interests and preferences to shape institutions, policies and programs, create or remove incentives, and condition political outcomes related to food and agriculture.

Livestock Technopark Peshawar (LTP) may be established, initially as an LTP Task Force through an executive order of the Chief Minister Khyber Pakhtunkhwa. Later on, an Act of the Legislative Assembly/Ordinance of Governor may be initiated. LTP will be an autonomous authority with full regulatory, administrative, financial and legislative powers to protect all the stakeholders of the livestock industry, and to engage all the relevant private and public sector organizations in the process. This would create an enabling environment for the growth of the emerging entrepreneurs, through a coordinated approach, targeted at generating decent employment and exportable surpluses. A balance approach would provide a level playing field to all the stakeholders and ensure a private sector led growth as per international standards. The Managing Board of Livestock Technopark Peshawar would comprise one representative each of: i) DG LDD Ext; ii) DG LDD Res; iii) DG Fisheries; iv) Dean FAHVS UAP; v) Secretary Local Council Board; vi) VC WUM; vii) KP-LFA; viii) Poultry Farmer; ix) Fish Farmer; x) Feed Processor; xi) Dairy Processor; xii) Meat Processor; xiii) KPCCI; xiv) KP FSHFA and; xv) MPA.

An Endowment Fund would be established to the tune of Rs.1.6 billion through provincial/federal/donors grants. The private sector would offer their land, animals, building and other assets for a period of at least five years with investment by LTP and operational arrangement by the private partner. The fund would be used for entrepreneurship development and the facilities required for relevant activities. The net profit, to be determined by a joint committee of the private partner and the LTP, would divide the profit at a ratio of 80:20, respectively. A non-lapsable Development Grant of Rs 1.4 billion would be provided for various infrastructural and operational activities.

Institutional Units-LTP would be established as: i) LPIC LDD Ext; ii) LBSC CVH Bannu; iii) LBSC Merged Areas; iv) LBSC VRI; v) LBSC VRDC Kohat; vi) LBSC VRDC Abbottabad; vii) LBSC Fisheries; viii) LBSC SH LCB; ix) DMTC WUM; x) LBSC AWKUM; xi) GT GU; xii) MTC SSBBU-S; xiii) LBSC UAP; xiv) BRMC KMU; xv) LBSC UOS. For managing each IU-LTP, except Policy Implementation Cell (PIC), the Management Committee

would comprise two members from the respective host organization; two members from other relevant public sector organizations; two members from the industry; and one member from district/tehsil council. The Management Committee for PIC will be composed of experts in animal health, breeding, training, research, vaccination, education, farming, products processing, entrepreneurship and media. A Committee of Institutional Units (CIU) of LTP would be established comprising one member from each Unit and a representative of the Chairman LTP. Each IU-LTP would report to the Management Board LTP and the progress, requirements, technical programs, etc., would be reviewed by CIU.

Entrepreneurship Units would be established as: i) Dairy Farming; ii) Beef Farming; iii) Mutton Farming; iv) Poultry Farming; v) Fish Farming; vi) Pets Farming; vii) Nontraditional Farming; viii) Vet Clinics; ix) Analytical Labs; x) Inputs Suppliers; xi) Renewal Energy Providers; xii) Legal Advisors; xiii) Innovators; xiv) Meat Shops; xv) Dairy Shops; xvi) Meat Factories; xvii) Dairy Factories. The Entrepreneurship Units would be registered with the Registrar of Firms, Government of Khyber Pakhtunkhwa and organized into a registered “Society of Livestock Entrepreneurships, Livestock Technopark Peshawar ''.

At the end of the year 2021, Khyber Pakhtunkhwa would be able to generate direct decent employment to the tune of 18000, each one earning about Rs. 50,000 per month and employing five more persons each. Hygienic, Halal and Organic food would be produced per annum, as: 657.0 million kg milk, 19.2 m kg beef, 32.9 m kg mutton, 45.0 m kg poultry meat and 3.2 m kg fish meat, valuing Rs. 5098 billion. A fraction of 10% may be injected into Halal Meat Export Market. Motivated young graduates in veterinary, engineering, medical, business and social sciences would be joining LTP for their career development and transformation of ideas into actions to serve the society. Quality conscious consumers would be having access to traceable food products in the towns. Public and private sector organizations would be having sufficient operational funds for motivating their staff and serving the people. And this is the Beacon of Hope committed by Prof Qureshi through the title of this FAO-KP Livestock Action Plan 2019.

Annex 3: ITC-UN Consultancy for Balochistan Livestock Breeding Policy 2022 - Executive Summary

It was a great experience for the National Consultant to work with the International Trade Centre (ITC), a joint agency of the World Trade Organization (WTO) and the United Nations (UN), as National Consultant for developing the "Balochistan Livestock Breeding Policy 2022" (BLBP-2022). It was an opportunity for me to utilise my knowledge, skills and experience prevailing over a period of 39 years, at the provincial government of Khyber Pakhtunkhwa, the University of Agriculture, Peshawar, Pakistan, and Charles Sturt University, New South Wales, Australia.

As per the agreed Terms of Reference, a literature review was conducted as Output 1, including analysis of existing policies, laws, and regulations, and the status of livestock breeding services, food safety, and standards. Based on the review, an issue paper was developed identifying issues under the following three categories: (i) Livestock Breeding; (ii) Lack of Good Governance; (iii) Challenges to the Private Sector.

For Output 2, the Consultant traveled to Quetta for interaction with the stakeholders in the public and private sectors.

Consultations were made at 9 public sector organizations (PSOs), including the Livestock, Forest, Local Government and Industries Departments for assessing their current and potential roles in the Policy related issues; the University of Balochistan, Balochistan University of Information Technology, Engineering and Management Sciences (BUITEMS), Sardar Bahadur Khan Women's University (SBKWU), and Lasbela University of Agriculture, Water and Marine Sciences (LUAWMS) for integration of academic wisdom to the Policy; and the Quetta Chamber of Commerce and Industry (QCCI) for engaging the real stakeholders affected by the Policy, i.e. the livestock farmers, products processors, marketing bodies and practicing veterinarians working with the private sector. A Good Governance Model (GGM) of Academia-Industry- Government Nexus (AIGN) was proposed. Separate Functional Units (FUs) were proposed for each of the nine PSOs to participate in the implementation strategy of this Policy.

The existing livestock breeding policy in practice in the country is not relevant to Balochistan, as it reflects a stereotyped approach focusing on dairy production through cattle and buffaloes. These animals need a large amount of feed, fodders, water and market access on a daily basis which are not available in Balochistan, a mostly arid or hilly region, contributing 55.3% of the national rangeland of 57.2 million hectares (Mha). Hence, the province can support meat production through sheep, goats, camel, and cattle farming, contributing 52%, 22%, 41%, and 11% of the national population, respectively (GOP 2006). Poultry was covered as an additional entrepreneurship asset.

This Policy has focused on enhancing the genetic and reproductive potential of indigenous livestock breeds, growth rates, and onset of puberty, health and productivity of animals through better rangeland management, feeding, housing, value addition, quality control, traceability and marketing backup. Economic traits like growth rates, fertility, productivity and disease and stress resistance may be used as indicators for genetic improvement. Entrepreneurship development support would be provided through an integrated approach by the sister organizations. Concerns of all the relevant stakeholders were accommodated through sharing the available trained manpower, land and financial resources available at various PSOs.

Breeding goals have been set like improving the quality of breeds rather than number of animals; earlier puberty and breeding; enhancing growth rates of young ones; improving semen quality and embryo transfer; establishing reproductive biotechnologies; improving reproductive efficiency of males and females; improving feeding, health and management status of genetically-improved animals; establishing nuclear stocks for sheep, goats, camels and poultry; conservation of endangered livestock breeds; addressing issues of breeding farmers through an advocacy forum; assessing zonal requirements and preparing work plans in consultation with local stakeholders; and developing and demonstrating entrepreneurship models for meat, milk, wool and poultry production.

Several thematic areas have been identified under this Policy. Improvement of genetic resources would be ensured through development of breeding standards and selection criteria for males and females and selecting future stock on the basis of productivity, health and economic and meat traits. Sheep and goats will be improved through selection among the local breeds, numerically the more important ones and investigating the local breeds for their potential to be upgraded through crossbreeding with local or exotic breeds. For camels, a cooperative setup will be provided for the local herds and studies will be conducted on breeding, management, nutrition, performance and reproductive behaviour of this animal.

Conservation of local cattle and buffaloes will be ensured for meat and milk purposes; selective breeding will be made on the basis of health and economic traits; and the indigenous cattle will be crossbred with semen from exotic breeds. Private farmers, veterinary practitioners and postgraduate university students would be involved in development of AI protocols for indigenous breeds. Demo farms, nuclear stocks and SPUs will be developed. Productivity of backyard poultry flocks will be enhanced through establishment of elite indigenous nuclear flocks at zonal levels in the province.

Reproductive management of animals would be ensured through training, research and extension services overcoming delayed or repeat breeding and poor growth rates of the young ones in various species of ruminants and camels. Research facilities would be established in relevant research and academic organizations in reproductive biotechnologies like semen quality, embryo transfer, cloning, semen sexing, transgenesis and other emerging technologies. The key threats to rangeland were identified as the increased number of livestock beyond the carrying capacity, improper land use and mismanagement. Prevention of the degradation process and establishment of check or delayed action dams are recommended. Indigenous knowledge must be utilised, involving local communities and traditions.

This document has been split into seven Policy Sections. Development of SMEs may be facilitated for milk, meat, wool and biotech products. A system would be introduced for the traceability and quality control certification of animals and animal products, which are mandatory for export of animal products across the country and international market. The price capping would be either removed through legislation at provincial and federal levels, or assigned to the proposed technopark, representing all the stakeholders.

Various categories of farmers, processors and potential entrepreneurs would be organised into registered societies and involved in legislation, planning and development at various levels. It will be an interactive platform for achieving SDGs 2, 3, 5, 7, 8 and 16. An Endowment Fund (EF) would be established through provincial, federal and donor grants for developing entrepreneurship models. The

private sector would offer their land, animals, building and other assets for a period of at least five years with investment by the proposed technopark and operational arrangements by the private partner.

The proposed Livestock Entrepreneurship Development Centres (LEDC) would be established at nine locations and run as public-private partnership (PPP)-based joint ventures through local committees under an EF to provide farmers with access to farm inputs, product sale, products processing, training and regulatory support. The Centres would offer resources for establishing model farming, milk and meat shops, products processing factories, diagnostic labs and marketing facilities.

Centre of Excellence for Genetics of Animal Production and Health (CEGAPH) would be established in northern Balochistan and Centre of Excellence for Biology and Entrepreneurship of Livestock (CEBEL) in southern Balochistan. CEGAPH will work on identification of genetic markers for various survival and economic traits and stress resistance and will study health, productive, reproductive and nutritional parameters of genetically improved breeds. CEBEL will integrate the biological knowledge of animal health, management, nutrition, breeding and reproduction with the entrepreneurship development potential across the livestock breeding value chain (LBVC).

Herd Health Program (HHP) teams would be constituted, engaging the qualified staff of the Livestock Department and university graduates, to support the farmers in improving health, breeding and reproductive efficiency; to improve products quality; and to reduce the per unit productivity cost through improved practices. Entrepreneurship models would be developed, engaging the postgraduate students at the proposed LEDCs jointly by the farmers, processors, universities and government officials through business incubation. Hygienic and Halal quality and traceability standards would be integrated into LBVC by the affiliated Centres of Excellence and Analytical Labs. Successful models would be selected as startups and university graduates would be sponsored to establish private companies for generating decent employment.

Presently, LBVC is provided services, mainly, by the Director General Animal Health with a current budget of Rs. 4.53 billion under BC21028 (28) Animal Husbandry, and development budget of Rs. 1.63 billion under 042106 Animal husbandry, as per official online resource-base. Looking at the schedule for new expenditure for 2022, it appears that the farmers are served by the regular staff stationed at Civil Veterinary Hospitals and Dispensaries, Livestock Farms, SPUs, Livestock, Dairy and Poultry Farms, etc.

Working in remote areas of the province outside their stations is a challenge for the staff. They have limited resources to reach the scattered herds of sheep, goats, camels and cattle. Out of the 1200+ qualified veterinarians working in the Department, the Consultant could encounter only one, during my field visits and meetings with the private sector stakeholders at the Quetta Chamber of Commerce and Industry. The proposed HHP teams would provide technical services and material supplies to the private farmers with in-built incentive-package for the staff and with no need for repeated fundings.

Most of the state land available with partners PSOs has remained underdeveloped which may be utilised by local investors on profit-sharing basis and public-private partnership (PPP) for rearing dry animals and surplus calves of the peri urban dairy farms. The ultimate goal of this Policy is to serve LBVC through an integrated approach of the PSOs, removing the bottleneck at production, processing and marketing levels and utilizing these resources for bringing prosperity in the region.

A GGM has been suggested to overcome the challenges to the private sector, impeding entrepreneurship development across LBVC. Management of the LBVC by the Directorate General Animal Health may be supplemented with inputs from nine PSOs through the proposed autonomous body (livestock technopark) with legislative, regulatory, financial and administrative powers, to boost entrepreneurship development. An endowment fund (EF) may replace the repeated funding to remove the financial burden on the government treasury. Additional resources and regulatory support will be provided to the PSOs under an EF. Financial and career incentives may be provided to best performers.

An Action Plan and Implementation Strategy was prepared comprising: (i) Policy Shift; (ii) HHP; (iii) Breeding services; (iv) Postpartum rebreeding and feeding plan; (v) Development of Livestock Farms; (vi) Feeds Entrepreneurship Model; (vii) Sheep, goats and poultry entrepreneurship models: (viii) LEDCs; (ix) Engagement of relevant PSOs; (x) good governance; (xi) Livestock Technopark Quetta (LTQ); (xii) PSOs support; (xiii) SMEs Support Cells; (xiv) COEs; (xv) Entrepreneurship network; and (xvi) Expected outcome.

The integrated model of LTQ would be an autonomous regulatory, financial and administrative authority supported by a non-lapsable development grant (Rs. 1.28 b) and an EF (Rs. 1.72 b). The nine partner PSOs agreed on the proposal during the consultative process. Livestock breeding resources of the province would be utilised for generating decent employment (27500), quality certified and halal meat (4.5 million kg) and biotech products (US$ 1 million) on an annual basis.

Annex 4. ASRT Egypt Consultancy for Dairy Science Park Cairo (DSPC) - Executive Summary

Livestock production in Egypt is a significant contributor to the nation's economy, supporting livelihoods, ensuring food security, and providing a source of quality nutrition to its growing population. Three key systems underpin this essential industry - the intensive, semi-intensive, and extensive bovine production systems. Each of these systems plays a crucial role in the Egyptian livestock sector, yet they exhibit distinctive characteristics, challenges, and opportunities. The Intensive Bovine Production System accounts for high-quality milk and beef production, essential for both domestic consumption and potential export. The Semi-Intensive Bovine Production System, while more disorganized, represents the majority of the bovine population and contributes significantly to the country's meat production. The Extensive Bovine Production System, although less productive per animal, plays a vital role in rural economies and provides a significant proportion of dairy products for local consumption.

Understanding the unique attributes of each of these systems is fundamental to our proposal for establishing the Livestock Technopark in Cairo. This project aims to innovate and optimise these existing systems, enhancing productivity, fostering sustainable practices, and creating entrepreneurship models. By doing so, we strive to generate decent employment, increase the output of exportable foods and biotech products, and further boost Egypt's livestock sector in the long term.

Based upon the literature review and experience of the Dairy Science Park under Good Governance and Policy Reforms (2011-2023) suggesting two technoparks under FAO-UN and ITC-UN national consultancies, this proposal is submitted for establishing Dairy Science Park Cairo (DSPC) as an autonomous regulatory, financial and marketing authority, run by a Board of Governors representing all the stakeholders and an Endowment Fund. DSPC will support the public sector organizations as facilitators and the academia in generation of feasible entrepreneurship models across the Livestock based Value Chain (LBVC). The Major task of DSPC would be generation of decent employment and exportable hygienic/Halal certified food and biotech products. DSPC will comprise of the following components.

Livestock Entrepreneurship Development Centers (LEDC): Egypt possesses dairy animals in the form of intensive, semi-intensive and extensive production systems. A multi-sectoral and multidisciplinary dialogue among stakeholders is required to appreciate the production, public health and environmental dimensions of livestock. Animal Recording System may be introduced for health and productivity indicators to enhance the per head productivity and control diseases. We suggest that the three production systems may be explored for entrepreneurship development through integration of good practices, value addition and marketing.

LEDCs may be established at appropriate points focused at developing and propagating entrepreneurship models across the Livestock Value Chain (LVC) under an Endowment Fund (EF), through collaborative efforts of academia, the private sector and government agencies, under the umbrella of DSPC.

Business Incubation Centre (BIC): Animal production complex in Yousuf El-Siddiq In the city of Fayoum has provided an excellent base for launching national programs in animal production, health, nutrition, housing, value addition and entrepreneurship potential of dairy cattle/buffaloes in collaboration with the

universities. Postgraduate University Students may be involved in such activities for applied research and development of feasible entrepreneurship models. A BIC may be established for such purposes.

Entrepreneurship Development Program (EDP): ADP may be launched in collaboration of relevant universities for transformation of the feasible postgraduate research into entrepreneurship models. The academic disciplines may participate in investigating farming models, meat and dairy processing, shelf life of food products, packing, preservation, and marketing, production of semen and embryos, development of diagnostic kits, solar energy applications, quality control for hygienic and Halal standards, exports and import requirements. like theriogenology may contribute in studying commercial production of semen, embryos and other biotech products; pathology departments may work on production of diagnostic kits, etc.

This concept is in line with the Entrepreneurial Discovery Process (EDP), prioritizing investments based on an inclusive and evidence-based process driven by stakeholders' engagement and attention to market dynamics. It has been a core element of the European Regional Development Fund (ERDF) Enabling Condition "Good governance of national or regional smart specialization strategy" for the period 2021-2027.

Centers of Excellence (CoE): The following two CoEs may be established at the relevant universities, where advanced and applied research has already been demonstrated: i) CoE for Genetics of Animal Production and Health (CEGAPH), to conduct applied research in genetic improvement for economic and survival traits of the indigenous livestock/poultry species and enhancing entrepreneurship potential through protocols development; ii) CoE for Biology & Entrepreneurship of Livestock (CEBEL) to integrate the biological knowledge of animal health, management, nutrition, breeding and reproduction with the entrepreneurship development potential across the livestock breeding value chain (LBVC).

Digital Networking, Training and AI (DNTAI): ForbesAdvisor (2023) reported on the Best Learning Management Systems (LMS) Of 2023. LMS, are software platforms designed to manage, distribute and track employee training. They are often used in corporate settings to deliver online courses and track employee progress. However, they can also be used in other ways, such as to provide compliance training or customer education. There are hundreds of LMS to choose from, each with its own strengths and weaknesses. Forbes Advisor analysed the best LMS options for small and medium businesses (SMBs), so you don’t have to. Absorb has been found to be the best for enterprise businesses nutrition, breeding and reproduction with the entrepreneurship development potential across the livestock breeding value chain (LBVC). Digital Services Portfolio (DSP) has been introduced by FAO-UN which aims at making useful data, information and statistics available and accessible as digital services to rural communities, by providing them digital agriculture advisories that leverage the knowledge of Countries, FAO and strategic partners in the mobile world. The DSP targets more specifically farmers, fishermen, livestock keepers, traders, extension officers, nutrition officers and other agricultural stakeholders in the field.

Artificial intelligence (AI) in animal farming was reviewed through a systematic literature review (J Cleaner Prod, 331:2022, 129956). AI solves the sustainable production needs on animal welfare, behavior, disease, and environment management. Individual identification enables the farm managers to treat animals as individually tailored diets and environmental control for an optimal productivity. Also, it

is an important step for the traceability of animal products through the supply chain. Up to date, ear tags and RFID technology are commonly used for individual identification of pigs, ruminants, and poultry. DSPC would utilise all these technologies in entrepreneurship development across the value chain.

Capacity Development of Stakeholders (CDS): Capacity development of stakeholders would enable them to play their due role in the entrepreneurial development process. International Livestock Research Institute (ILRI) has worked in this area involving the development of attitudes, skills, institutional set-ups as well as knowledge in agricultural research and development. ILRI works with individuals, organisations and institutions engaged in research and development as well as those making agricultural investment decisions at all levels across the sector. The intentional and purpose-driven efforts are supported to increase the capacity of its stakeholders to undertake and use research to generate development outcomes and scale up in a sustainable manner. Dairy Science Park has worked intensively with the relevant stakeholders and has come up with policy reforms for engaging them with the overall vision of the technoparks. All such resources would be utilised for establishing DSPC. Functional Units (FUs) will be established at each affiliated agency for participation in the activities of DSPC.

Endowment Fund (EF): For an uninterrupted functioning of the FUs of DSPC, an EF (US$ 4 m of of the total cost of US$ 15 m, Annexure 1) would be established through provincial, federal and donor grants or private sector investment, for developing entrepreneurship models. The EF would be managed by DSPC and released to the FUs according to achievements and meaningful plans. The private sector would offer their land, animals, building and other assets for a period of at least 5 years with investment by DSPC and operational arrangements by private partners. The fund would be used for developing entrepreneurship models, providing facilities required at various affiliated centres and for establishing common facilities and processing units. Net profit for each project will be shared on a periodic basis among the relevant stakeholders.

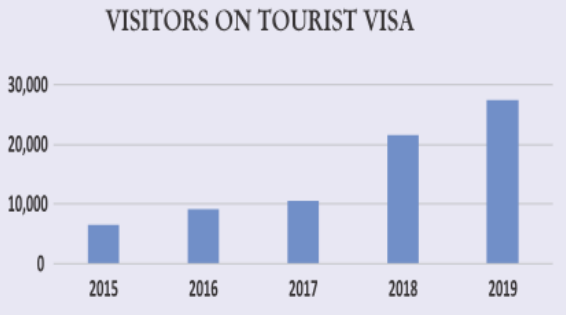
DSPC would be supported, commissioned and hosted by Academy of Scientific Research and Technology (ASRT), Cairo.

Annex V.

Pakistan Eco-Tourism Profile 2024

Tourism in Pakistan

The Pakistan Tourism Development Corporation (PTDC) is actively promoting tourism by highlighting the country's rich history, diverse culture, stunning landscapes, arts, and archaeological monuments. The visa policy has been liberalised, offering e-visas on arrival to 64 countries, including China. An e-portal, Salam Pakistan, facilitates tourists in finding hotels, transportation, and other services. PTDC has established connections with travel enthusiasts through Facebook and Instagram, and has developed draft National Minimum Standards for accreditation and certification to ensure service excellence. Tourist Information Centers provide assistance to both domestic and international tourists. Forbes listed Pakistan's northern areas as one of the top 10 adventure travel destinations in 2020, a recognition bolstered by visits from notable figures like Prince William and Kate Middleton.



The Eco-Tourism Resource Base

Pakistan's diverse landscape includes northern mountains and lakes, central deserts, and southern beaches. The Karakoram mountains feature K2, the world's second-highest peak. Notable lakes include Saifal Malook and Shangrilla, while famous deserts include Kharan, Thal, and Cholistan. Clifton and Gwadar are renowned beaches along the Arabian Sea coastline. The Forest, Wildlife, and Environment Department of Gilgit-Baltistan focuses on collaborative management of protected forests and biodiversity hotspots, developing national parks as eco-tourism hubs. The department's 2023-24 Annual Development Program supports projects like strengthening protected areas management, community-managed conservation efforts, and climate change mitigation through energy plantations. Federal projects like the Ten Billion Tree Tsunami Program (TBTTP) and UNDP-sponsored Glacial Lake Outburst Flood (GLOF) risk reduction are also underway.

Khunjerab National Park (KNP)

Khunjerab National Park (KNP) is located in Hunza district, where the Himalayas, Karakorams, and Hindu Kush meet. Established in 1975, the park spans 226,913 hectares at an elevation of 17,000 feet. Its primary purpose is to protect endangered species like the Marco Polo sheep and snow leopards. The park features alpine flora and many threatened species, including the snow leopard, Marco Polo sheep, Himalayan ibex, blue sheep, and brown bear. Bird species include the golden eagle, Himalayan snowcock, and Himalayan griffon vulture. The park's vegetation zones range from dry alpine scrub to birch forests. Tourist attractions include Jaisam Lake, Khunjerab top, Chafchingol peak, and Koksil peak.

Transportation Options

Air Travel: Pakistan has a network of domestic airports in major cities and tourist destinations, with airlines like Pakistan International Airlines (PIA), Airblue, and SereneAir providing regular flights. This facilitates quick access to remote areas, though it has a higher carbon footprint and limited service to some locations.

Road Travel: Operators like Daewoo Express and Faisal Movers offer extensive intercity connections. Specialized tourist services provide comfortable and direct routes, with some adopting eco-friendly practices. There are some private taxi services offering a variety of options including cars and luxury vehicles. Another mode of transportation is a passenger car service operating between Islamabad, Skardu, Gilgit, Ghizer, and Hunza.

Security Status

The security situation in northern areas like Gilgit-Baltistan and Khyber Pakhtunkhwa has significantly improved, with established protocols and special tourism police units to assist and protect visitors. Security checkpoints monitor sensitive areas, enhancing safety. Tourists are encouraged to stay informed, travel smart, and take precautionary measures to ensure a safe and enjoyable experience.

Food and Accommodation

Food: Northern Pakistan offers a variety of traditional dishes, such as Chapshuro, local cuisine such as Chap Shuro, Daodo, and Garma may be enjoyed. Many eco-tourism spots emphasise organic and locally sourced ingredients. Eco-friendly restaurants adopt sustainable practices like waste reduction, composting, and biodegradable packaging. Community dining experiences provide authentic regional cuisine and support local economies.

Accommodation: Eco-friendly lodges and hotels use sustainable architecture, energy-efficient lighting, and water conservation systems. Community-run guesthouses offer comfortable stays, ensuring that tourism benefits remain within the local community. Popular eco-friendly accommodations include Serena Hotels, Eagle's Nest Hotel, and PTDC motels. Most hotels can be booked through registered tour operators or online websites such as booking.com. Additionally, NATCO and Mashabrum are the main bus services available.

Dedicated Implementation Team

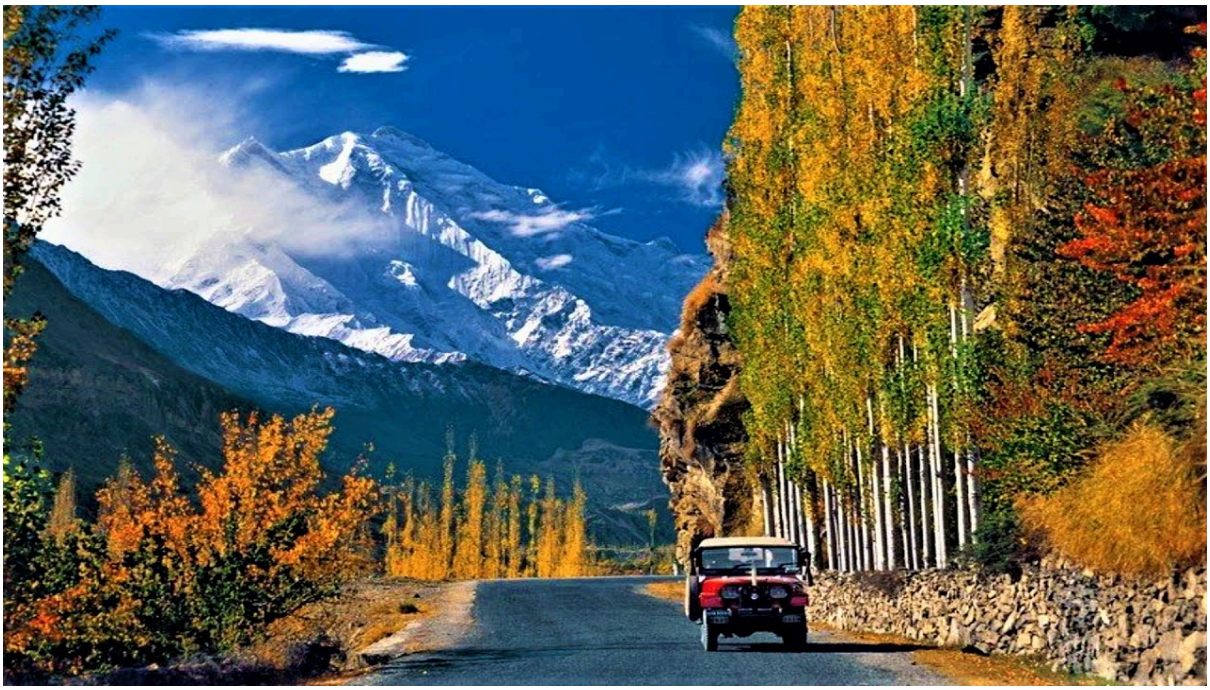
PTDC is the primary service provider and regulator of eco-tourism, offering important information and regulatory support. However, accommodation and travel facilities are often provided by private sector facilitators. Collaboration between public and private sectors, along with NGOs and educational institutions, is essential for promoting eco-tourism that benefits the environment, local communities, and the economy.

KIU Eco-Tourism Support Center (KESC)

The establishment of an Eco-Tourism Support Center (ETSC) at Karakoram International University (KIU) in Gilgit is recommended to facilitate Chinese tourists in Northern Pakistan. The centre would train and certify tourist guides, maintain a database of hotels and transportation facilities, facilitate passport and visa processes and launch postgraduate programs in eco-tourism, Chinese language and hotel management. Director ORIC-KIU has supported the establishment of ETSC.

Prepared by:

i) Prof M Subhan Qureshi, President NESS-Pak; https://dairysciencepark.org/ness/
ii) Mr Mahmood Ghaznavi, CCF, Government of Gilgit-Baltistan
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Khunjerab National Park, Gilgit-Baltistan, Pakistan

Annex VI. Recommendations of International Solar Expo and Conference 2024

SunSaviour	GreenWendEnergy Think Solar To Live Better	DAIRY SCIENCE PARK dsp	ISE INTERNATIONAL SOLAR EXPO
Har Ghar Ka Asli Player	**Think Solar to Live Better**	**Triple Helix Good Governance Model**	**Innovations for a Sustainable Future**

First International Solar Expo and Conference, June 1-2, 2024

The First International Solar Expo and Conference #ISE2024 was held on June 1-2, 2024. The Event was attended by delegates from the industry, civil society, academia and government organisations. The Event was organised by Prof M Subhan Qureshi, Chief Patron, Engr Zeeshan Saeed Shah CEO, Engr Saad Rashid CTO, Engr Irfan ul Haq Qureshi Coordinator General, senior staff of SunSaviour and Volunteers.

Industrial products, services and academic contributions were displayed through 30 stalls by private companies and universities. Three Panel Discussions were held, participated by 22 senior academicians and industry leaders. Keynote lectures were delivered by 7 notable leaders from academia and industry. Ten postgraduate scholars and researchers presented their research findings and ideas through powerpoint while 20 posters were presented by young scholars. Three top presenters were awarded cash prizes of Rs.50,000, Rs.30,000 and Rs.15,000, respectively. All the delegates were provided certificates of attendance on request.

Mr Ghulam Ali, Ex-Governor KP inaugurated the Event as the Chief Guest. He compared the status of Kashgar and Peshawar during meetings of the respective Mayors during 1983 and highlighted the tremendous potential of development for this region. The current event was the best model of engaging the educated youth in productive activities. GreenWend Energy was demonstrated as the best startup model in delivering solar energy services to the residential and commercial entities. Its products wing, the SunSaviour developed advanced versions of the inverters and lithium ion batteries, produced the same in Chinese factories and marketed in Pakistan with higher acceptance levels of the consumers. Best option for our youth would be to launch their solar energy related business setups for overcoming the energy, employment, environmental and financial crisis prevailing in the country.

President, Sarhad Chamber of Commerce and Industry (SCCI), Mr Fuad Ishaq chaired the Concluding Session. The President SCCI urged the government to take steps to promote the solar and green energy sector, which is the only way to fulfil the growing energy needs of the country that will not only provide a clean environment but also create employment opportunities. Keeping in the prevailing scenario, the SCCI chief identified solar energy as the only path to overcome the increasing energy crisis and needed to encourage this important sector at governmental level. He agreed on the Recommendations presented by Prof M Subhan

Qureshi, Chief Patron ISE2024 and establishment of a Steering Committee on Solar Energy to oversee the issues faced by the to: 1) oversee the issues faced by the stakeholders; 2) facilitate the ongoing university graduates to establish entrepreneurship models and; 3) to work on reducing the burden on public treasury through solarization of the state owned entities like universities, schools, colleges, offices, tubewells, etc.

Recommendations

Based upon the advice of the Chief Guest of the Inaugural Session, Haji Ghulam Ali, Ex-Governor Khyber Pakhtunkhwa and Ex.Member Senate of Pakistan and Chairperson of the Senate Committee on Commerce and Textile Industry; advice of the Chief Guest of the Concluding Session, opinion of the members of the Panel Discussions and the Audience, the following recommendations are presented:

1. The recent bloom in the solar industry through investment of private sector and the residential and commercial consumers have resulted in expansion of the volume of business several folds (1.41 GW in 2024), but rumours of unjustified taxing of the consumers instead of incentivizing it, is resulting in an unrest among the people. A duty of about 40-50% has been imposed on import of inverters and lithium batteries, which is strange as the solar panels have been exempted from such duties. Hence, we recommend that Solar Energy Applications must be taken as a higher priority policy item at federal and provincial levels through legislative, administrative and financial coverage.
2. The practice of approval of the green energy metres for the solar systems installed in the province is troublesome for the consumers as it takes a very long time and passess through many hands expecting illegal favours. An transparent, user-friendly, online system may be introduced for allotment of greenwend energy metres to the consumers after uploading the essential document and the government approved fees.
3. The outgoing graduates from the universities would be facilitated in establishing solar based business setups in manufacturing, marketing or service delivery. ORIC offices of the Universities would be tasked to oversee such activities in coordination with the local and international solar companies, investors and donor agencies through an appropriate Endowment Fund not less than Rs.2 billion to be managed jointly by a 15- members Steering Committee of the private and public sector organisations, hosted by SCCI. Successful models like Inverex, GreenWend Energy, SunSaviour, Sky Electric, Tesla Pakistan would support the Committee in identifying startup models.
4. Financial Institutions would provide access to easy finance for such startups. The State Bank of Pakistan and Bank of Khyber would allocate special packages for this initiative.
5. Manufacturing solar energy devices within the country and through joint ventures abroad, must be supported through an incentive package, covering regulatory, financial and marketing aspects, as an import substitution measure.
6. A special package may be provided for solarizing of the vulnerable families and individuals and houses located in the remote regions, with meagre power consumption, through reduced costing.
7. The Solar Energy sector may be provided legislative cover, not to be affected by political

disturbances.

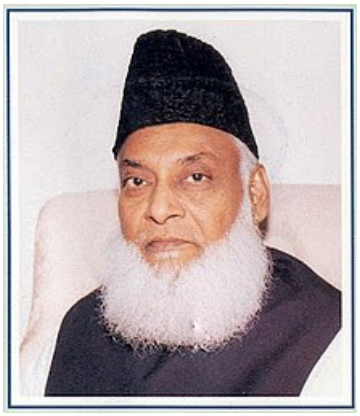
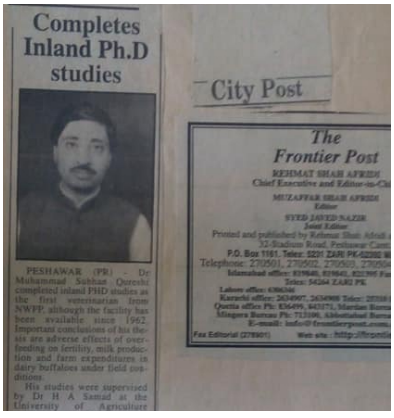
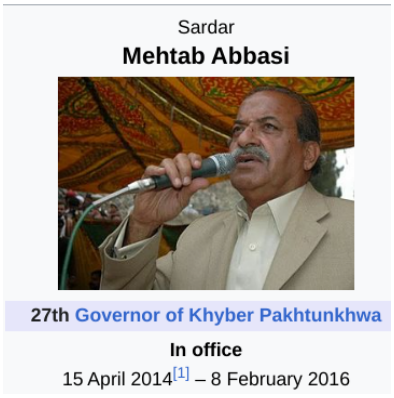
8. Bureaucratic hurdles usually hinder the development process in the country in spite of a strong political will for change; which needs to be overcome through legislation.
9. Universities may introduce postgraduate training and degree programs in designing, manufacturing, marketing and entrepreneurship development.
10. Food Security may be ensured through Solar Energy Applications like water pumps, solar dryers, pest control, electric fences in livestock farms, solar tractors and other farm vehicles, solar greenhouses, solar cold storage, solar sensor and monitoring systems, solar irrigation controllers, solar grain mills, may be introduced. China, India, Kenya, Netherlands and the USA have adopted such technology resulting in boosting agriculture and livestock productivity.
11. The issue of payment to Independent Power Producers (IPPs) has been a permanent headache for the government, national exchequer and the common man. A serious dialogue may be initiated with the IPPs and a one time Golden HandShake must be made to get rid of these chronic issues.
12. Training accreditation and certification of service providers, installers, engineers & technicians to ensure the quality of services/inputs to the solar energy applications.
13. A Steering Committee on Solar Energy (SCSE) will be established at Sarhad Chamber of Commerce and Industries to: 1) oversee the issues faced by the stakeholders; 2) facilitate the outgoing university graduates to establish entrepreneurship models based upon their academic wisdom, in manufacturing and services in solar energy and; 3) to work on reducing the burden on public treasury through solarization of the state owned entities like universities, schools, colleges, offices, etc. The SCSE will be backed up by an Endowment Fund of Rs.5 billion and will comprise membership from:
    a. *4 Universities:* one member each from the UET Peshawar, UET Mardan, City University, and UoT Nowshera;
    b. *4 Companies:* one member each from and Tesla/Absol Energy, SunSaviour Pakistan, Barg Engineering Consultant, and SkyElectric;
    c. *2 Government Departments*: one member each from the Department of Industries and Higher Education and;
    d. *2 Civil Societies*: one representative each from Dairy Science Park, Pakistan Youth Organization;
    e. *2 SCCI*: two representatives of SCCI.

    It will make the total membership of STSE as 14. The Committee members will be selected for a term of 3 years and the Chairman of the Committee will be elected by the members among themselves. The committee will make decisions on simple majority with a quorum of 50% of the total members.

Prof M Subhan Qureshi, Chief Patron ISE 2024
Website: www.internationalsolarexpo.com

13. Pictorial Review of the Life Motto of Prof Qureshi:

"Guided by the divine principles of Prophet Muhammad (SAW), sent to the worlds as a mercy by Allah SWT, I am committed to alleviating the burdens of people through initiatives at Dairy Science Park. My aim is to radiate as a beacon of hope and relief, seamlessly uniting earthly capabilities with spiritual insights.

		
1979: Mian Muhammad Shafi (Meem Sheen, Marhoom), Founder All India Muslim League sensitized Prof Qureshi to prepare a gift for Prophet Muhammad (SAW) for the Day of Judgement	**1980:** Dr Israr Ahmad (RA) motivated Prof Qureshi for becoming a part of the process of the revival of Ummah as predicted by Prophet Muhammad SAW before the Day of Judgement	**1984:** Mr Jamila Subhan Qureshi (Marhooma) provided unwavering support to Prof. Qureshi, enduring resistance from his superiors and their administrative and financial punishments.
		
1994: Prof Qureshi compared livestock contributions of regional countries at FAO Bangkok and identified annual losses of US$ 20 b via PhD thesis	**1998:** Sardar Mehtab Abbasi invited Prof Qureshi for briefing and approved the Chief Minister Development Plan, updated later on to Dairy Science Park	**2010:** Prof Qureshi joined CSU Australia as Adjunct Professor, contributed in Pak Australia Dairy Project and coined Dairy Sci Park in Egypt with Dr AR Ilyas

Pictorial Review of the Life Motto of Prof Qureshi (continued)



2011: Organized Int'l Conference and Industrial Exhibition on Dairy Science Park at Peshawar, the first of the biennial series



2014. Small ruminants identified as entrepreneurship model for northern and arid areas



2014. University Feed Mill functionalized under lease agreement as an Academia-Industry Model



2014. Maize Silage introduced as an innovative good practice



2015. Pak-Turkey Business Dialogue during Industrial Exhibition at DSP III



2015. Peri urban dairy buffaloes identified as entrepreneurship model for suburbs of big cities

Pictorial Review of the Life Motto of Prof Qureshi (continued)



2015: The Triple Helix Model of Good Governance; Industrial Exhibition at the DSP-IV



2015: The Dairy Science Park team collaborated with the Center of Excellence for Bovine Genetics (CEBG), Okara, Pakistan



2015. Collaboration established with SN Labs USA for Biorisk Management Workshops at Netherlands



2016. MoU on Collaborative BRM Initiative between KMU, UAP, DSP and HEC



2017. Ferdowsi University Mashhad Iran hosted Entrepreneurship 2017



2017: Task Force on Dairy Science Park was approved by the Chief Minister, Government of Khyber Pakhtunkhwa Province

Pictorial Review of the Life Motto of Prof Qureshi (continued)



2017. 5th Int'l Workshop on Biorisk Management was co-organized with SNL-USA; prepared DVM-BRM Curriculum Package for Pak Univs



2017. Jan Meat Shop, Quality Certified for price fixation exercise of district administration



2017. Quails introduced as an entrepreneurship model



2017. Farmers Meat certified as an entrepreneurship model



2017. Peshawar Meat introduced as an entrepreneurship model



2017: Co-Organized International Conference and Industrial Exhibition on Dairy Science Park at Konya, the fourth of the biennial series

Pictorial Review of the Life Motto of Prof Qureshi (continued)



2019. The Beacon of Hope - Kamran Khan, Royal Dairies (FAO Livestock Action Plan, Qureshi MS)



2019. Dairy Science Park Quetta established during DSP V



2019. Establishing Gomal Technopark and Business Facilitation Centers agreed at DI Khan



2022. Livestock Technopark Quetta proposed under ITC-UN Consultancy (Qureshi 2022)



2024. Co-organized the 1st International Solar Expo and Conference at Peshawar



2024. National Eco-Security System Pakistan (NESS-Pak) established and represented at Shennongjia Eco-Security Congress in China